STATEMENT OF INTENT

…On The Trail

Planned Development

Greenville, South Carolina

Site Design, Inc. Job No. S200684

February 10. 2021

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1.0 PURPOSE

This statement is intended to describe in detail the proposed planned development of the ”…On The Trail” property, hereafter referred to as "the Project." The Project consists of +/-240 acres located along the Reedy River and Swamp Rabbit Trail. The Planned Development (PD) will designate the property into a distinct district based on existing property lines, proposed roads, and natural boundaries. The Project site currently consist of seven parcels (Greenville County PIN #: 0160000100100, 0160000100101, 0160000100102, 0160000100201, 0160000100109, 0160000100106, and 0157000200200).

The specific intent of this Project is to develop a high-quality mixed-use development that is conveniently located, and to provide housing opportunities, working and professional service space, educational space, restaurant and retail space, public space, transit and other natural elements. Standard zoning will not allow this type of development to occur while maintaining the natural integrity of the site as well as providing optimum privacy for both the proposed and the existing community.

2.0 EXISTING ZONING

The Project is currently zoned I-1 (Industrial District), R-10 (Single Family Residential), and R-MA (Multifamily Residential District) per the current Greenville County Zoning map.

3.0 EXISTING TRANSPORTATION, UTILITIES, SITE CONDITIONS

The Project has many potential access points including direct frontage on Brooks Avenue, Bishop Street, Bud Street, Latimer Street, Old Buncombe Road, West Blue Ridge Drive, and School Road.

Sewer is available by way of a gravity line provided and maintained by the both the Parker Sewer District and Berea Sewer District. Water service is also available, provided by the Greenville Water System. Electricity is provided by Duke Energy. Telephone service is provided by AT&T. Cable and internet is available through Charter Spectrum Communications. Natural gas is provided by Piedmont Natural Gas. The Project lies within the Parker Fire District and Berea Fire District services areas. Will Service letters can be found in Appendix A.

4.0 DEVELOPMENT PROGRAM

The property will be developed in a series of phases over several years that will create a cohesive neighborhood of mixed uses, fitting within the existing community and natural surroundings. The limits of the Planned Development are shown on the accompanying Planned Development Preliminary Development Plan (Kimley Horn Appendix C).

4.1 Current Conditions

The site is the location of the now closed US Finishing / Cone Mills facility. The parcels are a mixture of forested land, detention/fire ponds, auto repair shop, and the old mill site. The surrounding uses are a mixture of single family detached homes, industrial, commercial, and educational. The Swamp Rabbit Trail runs through the western portion of the property and may require location modifications if Duke Energy is unwilling to relocate certain transmission lines within the site. A phased Final Development Plan will be submitted as part of the submittal to the County's Land Development Department to be reviewed in accordance with the Greenville County Zoning Ordinance.

4.2 Project Site

As planned, 55.8 +/- acres, will contain parks, trails, other outdoor uses. Due to the flood way in this planned area all uses will be subject to Floodway Development restrictions. The site has approximately 184.2 acres outside the Floodway which may contain multifamily residential, live-work, commercial, parking facility, retail stores, office, hotel, light industrial, commercial signage, educational facilities, stadium, medical facilities, distillery, brewery, grocery store, self-storage facility, recreation indoor, recreation outdoor, Automotive Repair Facility, Automotive Service Facility, care facilities, communication tower, communication antenna, residential condominium, commercial condominium, corporate headquarters, data center, , industrial/service, laboratory, manufacturing, dry cleaning, dwelling, recording studio, print shop, post office, museum, library, pet grooming, government facilities and operations, farmers market, concert hall, dance studio, catering establishment business incubator center, barber/beauty shop, financial institution auditorium, amusement, retail wine and spirits, office-park, restaurant, bar, nightclub, shooting range-indoor, single-family attached, equipment sales and rental. Flex space, special event facility mobility hub, vertiport, civic space, parks, trails, theater, tavern, recreation area, veterinary clinic, cemetery, veterinary hospital, other outdoor uses such as workout equipment, games, and picnic shelters, and ancillary structures such as shared restrooms, including parking connecting to the trail.

The cemetery located on parcel 0160000100101 shall be protected from development. Access shall be allowed in perpetuity to descendants, families, and caretakers.

Typical 90-degree parking spaces will be 9'x20' with parallel parking spaces at 7'x20'. Diagonal spaces will vary dependent on the angle that is chosen but will comply the County Ordinance. Compact car spaces may be located in the commercial and mixed use areas. Sidewalks shall be between 4' and 10' in width. Public drive aisles will be a minimum of 12' lanes (including gutter) or 24' face to face of curb when a two lane road. Bike lanes will be included were appropriate and sized per discussions with Greenville County.

The Site Plan attached here to as Exhibit C includes the following:

Area Name / Acres	**Use**	**Max. Density**	**Max. SF/Units**	**Max Height**
Recreation/55.8AC	Outdoor Recreation	N/A	55.8 ac	N/A
Multi-Family/75AC	Multifamily Housing	20 units / acre	2,000 Units	100'
Storage/10AC	Mini-Warehouse	N/A	112,500 SF	75'
Hotel/10AC	Hotel	N/A	200 Key	90'
Office/32AC	General Office Buildings	N/A	3,500,000 SF	200''
Retail/50AC	Shopping Center/Grocer	N/A	872,000 SF	30'
Fine Dining/4AC	Restaurants (Sit Down)	N/A	25,000 SF	20'
Fast-Food Dining/3AC	Fast-Food Restaurants	N/A	18,000 SF	20'

This Site plan is "ONLY A PRELIMINARY DEVELOPMENT PLAN" and the Density, Intensity and Height Restrictions shall be governed by a combination of parking, open space, drainage, setback yard and the following step back height restrictions from perimeter of the entire Project:

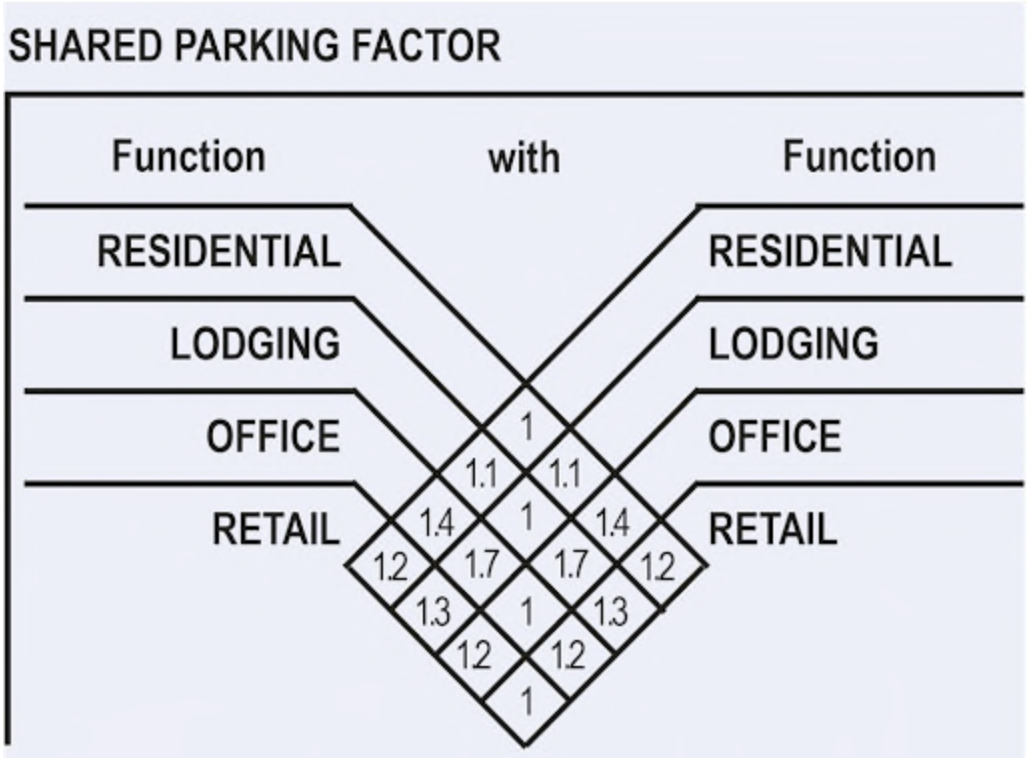
Stepback	**Max Height**
25 Feet	55 Feet
40 Feet	75 Feet
60 Feet	100 Feet
100 Feet	150 Feet
Greater Than 100 Feet	No Restriction

But total development plan density and intensity shall not exceed a gross lot area ratio of 2.0.

4.3 Traffic Impacts & Parking Requirements

A Traffic Impact Study (TIS) for the overall masterplan of the development is provided in Appendix E, and the identified mitigation required by the development, at the appropriate time that the thresholds identified in Article 9 of the current Land Development Regulations (as amended) are met for the overall development of the project based on the masterplan. The mitigation (infrastructure improvements) will be installed prior to the issuance of certificate of occupancy permits for uses that meet the necessary thresholds. With a masterplan development of this magnitude, changes can and will happen to the plan. Therefore, with each plan development submittal, a technical memorandum, prepared by a professional engineer shall be provided. The technical memorandum will be considered an addendum to the masterplan TIS, and as such will spell out the required infrastructure mitigation needed for the specific development submittal/phase. This will allow the development to provide an accurate assessment of the mitigation needs reflective of potential changes in the market and the development masterplan.

As both a town-center plan with the optional transit-oriented development (TOD) opportunities as well as other modal attractions (bicycle and pedestrian), the parking requirements have been provided herein, but as an alternative to the Standard Parking Analysis identified herein, the number of required off-street vehicular parking spaces may be determined through an approved Shared Use Parking Analysis of the development that may include on-street parking in the analysis. The analysis will be completed by a licensed professional engineer. This analysis will be included in the technical memorandum for each of the development submittals/phases that are initiated. The technical memorandum will compare parking needs of the individual phase against the overall master plan parking needs and will consider what has been previously developed.



The shared Parking Standards Table above provides a method for calculating shared parking for buildings with more than one Use type. It refers to the parking requirements that appear in the uses listed above. The parking required for any two functions on a lot is calculated by dividing the number of spaces required by the lesser of the two uses by the appropriate factor from this Table and adding the result to the greater use parking requirement.

For instance: for a building with a Residential Use requiring 100 spaces and a Commercial Use requiring 20 spaces, the 20 spaces divided by the sharing factor of 1.2 would reduce the total requirement to 100 plus 17 spaces.

The initial TIS will be prepared utilizing the Preliminary Site Plan as a demonstrative exhibit. Updates to the development plan as phases are completed may require a revised TIS and will be submitted to the County on an as needed basis.

4.4 Common Open Space

Common open space will be provided in various locations throughout the PD area. The overall open space calculations will be shared by all Lots/Phases such that open space from one Lot/Phase can benefit from the density of another Lot/Phase within the PD.

Floodway areas shall count toward open space requirement so long as said floodways have been improved to allow recreational use.

5.0 STORM WATER DRAINAGE

The Project will utilize existing draws, swales and a designed storm drain system to gather and conduct storm flows through and off the site. The storm sewer system will be designed to meet and exceed local, state, and federal regulations, involving storm flow and siltation and erosion control. The quality and quantity of site related storm water discharges will be provided by utilization of new multi-purpose storm water basins and existing storm water basins. These basins may be located on or offsite, so long as they are in the same watershed. The storm water features will be maintained by those Lots/Phases utilizing the respective feature.

6.0 SETBACK YARD

The Project will have a Setback Yard surrounding the perimeter of the entire Project. The Setback Yard will be 25 feet along the entire external perimeter of the Project where it abuts a parcel. Where the parcels abut roads or alleys, standard building setbacks will apply. Within the 25' Setback Yard no hardwood trees over four inches in caliper shall be removed unless required by infrastructure design, utility design, or placement of a path. No structure of any type shall be erected other than entry monument signage. Where there are no trees larger than four inches in caliper, privacy and screening will be provided through the use of berms, fences, or landscaping, or a combination of the above. Each Property Owner, whether commercial or residential, will maintain the Setback Yard that is part of their Lot/Phase.

Internal stepbacks, which are not required by County ordinance, shall restrict height so as to allow for a gradual massing of buildings as moving towards the center of the site. This will allow for a building height transition from the surrounding one-story residential buildings to multi-story residential and commercial buildings. Buildings are allowed within the internal stepbacks, but the height is restricted based on the table shown on the conceptual plan.

All landscaping on the site, including the buffer, parking lot landscaping, and tree ordinance requirements, shall conform to the now current Greenville County Tree Standards Ordinance and Greenville County Zoning Ordinance at the time the Lots/Phases are developed per the proposed Site Plan for the respective Lot/Phase. However, the PD shall have the flexibility to transfer unallocated Open Space and landscaping between Lots/Phases to meet both the Greenville County Tree Standards Ordinance and Greenville County Zoning Ordinance in effect as of the approval date of this PD for the approved Site Plan for the respective Lot/Phase.

7.0 ACCESS TO THE PROJECT

Access to the Project will be provided by a minimum of five main entrances and two secondary access points. Main entrances will be provided on the following roads: Brooks Avenue, Old Buncombe Road, and Highway 253. Secondary access points will be identified during the Site Plan preparation. Each entrance will allow access to the entire Project as all Lots/Phases are interconnected. The entrances will be designed to reflect the quality of the entire community. Main entrances will be designed as gateways to the project for residents and guests. Secondary access points will be designed for lower traffic roads and intended more for residential use rather than commercial us. Main entrances will feature larger signs with the potential for offsite wayfinding signs.

Both public and private improvements will be made to the site based on the FDP. All privately owned improvements will be maintained by the owner of the respective Lot/Phase on which the improvement is made. Public improvements will be donated to the respective public agency.

The pedestrian and vehicular connections between Lots/Phases are depicted on the Preliminary Site Plan as attached to this statement of intent. As future development takes place a development plan will be prepared showing proposed connections and any necessary minor connection.

8.0 SIGNAGE & LIGHTING

Freestanding signage shall be a pylon or monument style sign. The intent is to provide building identification and location signage for each Lot/Phase or Building, where emphasis is on directing people in and out of areas as opposed to large advertising signs. Signage will be in accordance with Greenville County sign regulations in effect as of the

approval date of this PD. Face of sign will be fabricated aluminum and acrylic on a base of concrete, brick or stone; sign copy may be acrylic or vinyl graphics. Portions of sign may be internally illuminated/back lit. Each entrance may feature a site sign, up to fifteen (15) total and each commercial building will feature a sign listing the businesses located within the building. Wayfinding signs may be utilized to better direct traffic to their desired destination. Residential developments will feature a sign at the entrance to the applicable development.

Site lighting will be selected based on the building style and features. Pedestrian and residential area lighting shall conform to Greenville County's regulation of maximum 16-ft height with full cutoff. Parking lot and roadway lights will be sized for appropriateness of the use, generally with a maximum height of 30-ft. Sports lighting will be sized to be proportionate to the facility being constructed. All lighting will be subject to review by the County during the construction document approval process.

9.0 PHASING

Engineered drawings and appropriate permits will be pursued immediately as Lots/Phases are developed. Development will begin as soon as all permits have been issued. The site is currently on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priority List (NPL), commonly known as Superfund site. It is anticipated that approximately 150 acres is being noticed to the public by the Environmental Protection Agency (EPA) as "No Further Action" parcels initially. Once approved with a Record of Decision by the EPA that No Further Action is necessary, the subject acres will be Delisted. As such, these will likely be the initial acres available for redevelopment. Longer-term remedial response actions will be required for some of the remaining acres. Accordingly, those acres will require more time to be removed from the NPL slowing the redevelopment Phases. It is anticipated to take up to 10 years for all portions of the site to be removed from the NPL and placed into productive use.

Due to the size of the project and the extended timeframe, it is expected that there will be at least six to eight distinct phases, with the possibility of sub-phases for smaller developmental

elements. Elements will be determined based on community need at the time of the development and will be discussed with the County prior to submittal for permitting.

10.0 COMMUNITY DEVELOPMENT DISTRICT

As the properties in the Project are developed, the property owners agree to develop the respective Lots/Phases in a manner consistent with this Statement of Intent and the Preliminary Development Plan as attached. Future curb cuts, pedestrian connections, and driveways will be established to address the needs of the Project including specific development needs and other items of concern and shall not be classified as major modifications. Easements addressing cross uses within the Project will be put in place as needed. A form of a public improvement association will be created to manage the areas that are privately held but open to the public. Its main powers will be to plan, finance, construct, operate and maintain community-wide infrastructure and services specifically for the benefit of its residents.

11.0 CONCLUSIONS

This Project will provide a neo-traditional area in which there will be a combination of living, working and routine lifestyle opportunities. This Project will provide office space, retail space, hotel, civic, light industrial, and recreational opportunities which will benefit those living within the Project and those living in nearby vicinity of the Project. The property adjoining the streets will be landscaped to comply with the Greenville County landscape Ordinance in effect as of the approval date of this PD. Existing vegetation will be maintained where practical to provide an immediate blend with existing areas. Buildings along the perimeter of the site will be scaled to transition from the surrounding uses to the uses at the center of the site.

This approval will allow for minimum site penetration and natural destruction while obtaining a density for the Project consistent with the community. This type of development cannot be accomplished while utilizing traditional zoning.

Appendix A – Will Serve Letters

AT&T
C&E South Carolina

W. Anthony Harris
218 College Street,
Greenville SC 29601
864.354.0411
willie.harris.1@att.com

Date: 10/23/2020

Ms. Alison Brandt,
Site Design, LLC
Civil Engineers ● Surveyors ● Landscape Architects
225 Rocky Creek Road , Greenville, SC 29615

RE:

Dear Ms. Brandt,
This letter is in response to your request for confirmation of service availability for the proposed project located at the NE corner of Highway 253 and Old Buncombe Road, encompassing Tax Map parcels - #0160000100100, 0160000100101, 0160000100102, 0160000100201.

This letter confirms that the above referenced land parcel is located in an area served by AT&T. Any service arrangements for this development will be subject to later discussions and agreements between the developer and AT&T. Please be advised this letter is not a commitment by AT&T to provide all AT&T service offerings to this location.

Please contact me regarding any issues for which we might be of service as I will be managing the design for your development at 864.354.0411.

Thank you for contacting AT&T.

Sincerely,

W. Anthony Harris

Engineering Network Manager
C&E South Carolina

W. Anthony Harris

Paul Mills

From: Keith Dewease <kdewease@bereasewer.com>
Sent: Thursday, October 22, 2020 11:49 AM
To: 'Alison Brandt'
Subject: "Will Serve " letter for sewer availability
Attachments: Scanned from a Xerox Multifunction Printer.pdf

Please see map that I attached. Only a portion of tax map number 01600000100100 is the Berea area. The rest is in the Parker area. We have capacity for this project.
Thanks Keith

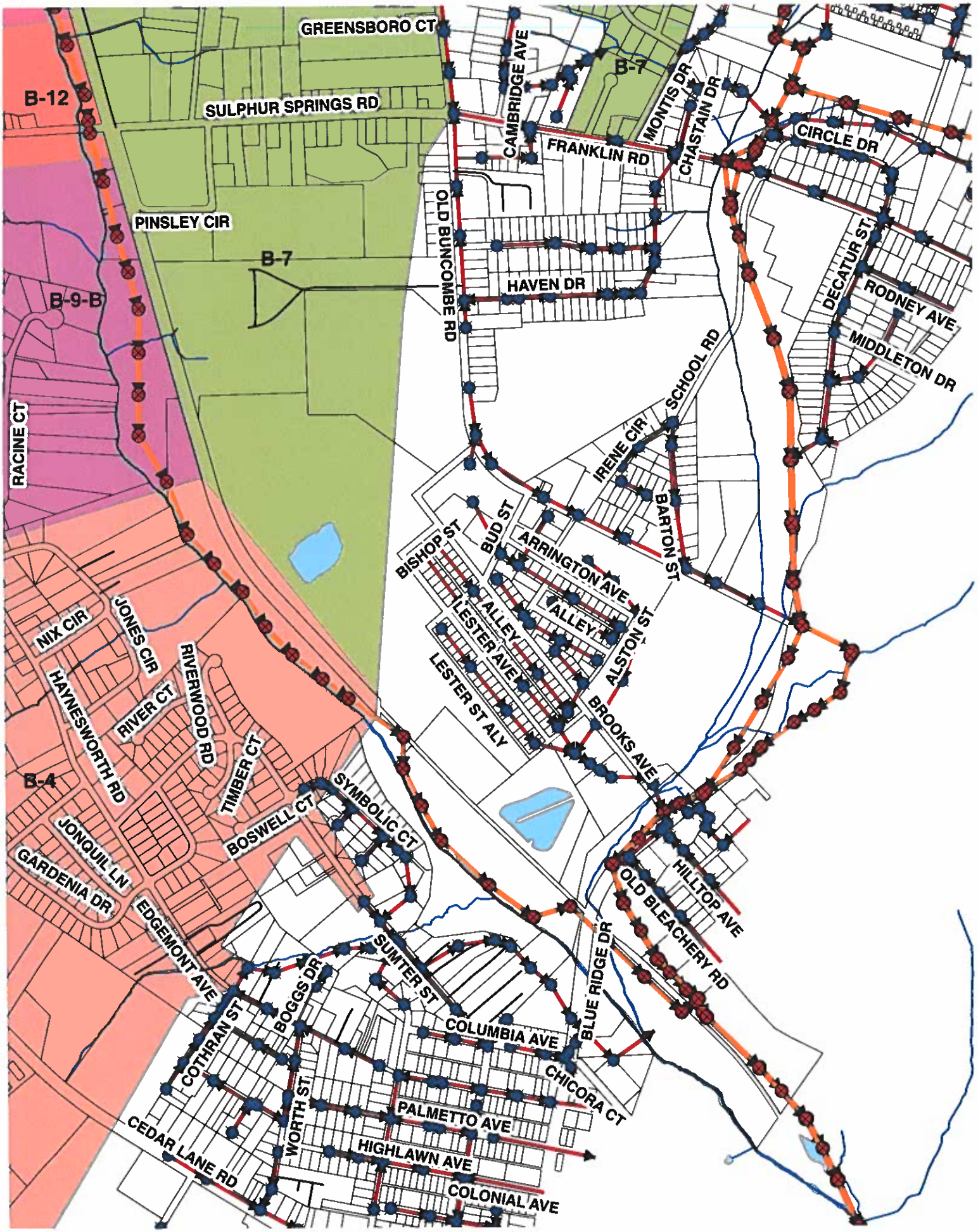
-----Original Message-----
From: noreply@bereasewer.com [mailto:noreply@bereasewer.com]
Sent: Thursday, October 22, 2020 7:16 PM
To: Keith
Subject: Scanned from a Xerox Multifunction Printer

Please open the attached document. It was sent to you using a Xerox multifunction printer.

Attachment File Type: pdf, Multi-Page

Multifunction Printer Location:
Device Name: XRX9C934E9CC63F

For more information on Xerox products and solutions, please visit http://www.xerox.com


GREENSBORO CT
B-12
SULPHUR SPRINGS RD
CAMBRIDGE AVE
B-7
MONTIS DR
CHASTAIN DR
CIRCLE DR
FRANKLIN RD
OLD BUNCOMBE RD
PINSLEY CIR
B-7
HAVEN DR
DECATUR ST
RODNEY AVE
MIDDLETON DR
B-9-B
SCHOOL RD
RACINE CT
IRENE CIR
BARTON ST
BUD ST
BISHOP ST
ARRINGTON AVE
ALLEY
ALLEY
LESTER AVE
ALSTON ST
LESTER ST ALY
BROOKS AVE
NIX CIR
JONES CIR
RIVERWOOD RD
HAYNESWORTH RD
RIVER CT
TIMBER CT
B-4
SYMBOLIC CT
BOSWELL CT
JONQUIL LN
GARDENIA DR
EDGEMONT AVE
HILLTOP AVE
OLD BLEACHERY RD
SUMTER ST
BLUE RIDGE DR
BOGGS DR
COLUMBIA AVE
COTHRAN ST
CHICORA CT
WORTH ST
PALMETTO AVE
CEDAR LANE RD
HIGHLAWN AVE
COLONIAL AVE

Kandace Collins
1636 Pearman Dairy Rd
Anderson, S.C. 29625
O: 864-260-6052
C: 864-209-9417

January 6, 2021

Alison Brandt, R.L.A., ASLA
Landscape Architect
SITE DESIGN, INC
225 Rocky Creek Road ,
Greenville, SC 29615
O) 864-271-0496

Subject: Letter of Electric Availability

Dear Ms. Brandt:

This letter confirms that Duke Energy can provide electric service to the proposed site located on the NE corner of Highway 253 and Old Buncombe Road (Tax Map parcels - 0160000100100, 0160000100101, 0160000100102, 0160000100201) provided all necessary easements, permits and rights-of-way can be obtained. Please call Kandace Collins at Duke Energy at (864) 209-9417 when your construction plans are complete so we can discuss your electrical service requirements.

Duke Energy appreciates the opportunity to provide your electric service.

Sincerely,

Kandace S. Collins

Kandace S. Collins
Engineering Design Associate
1636 Pearman Dairy Rd
Anderson, S.C. 29625
O: (864) 260-6052
C: (864) 209-9417
Kandace.Collins@duke-energy.com

GreenvilleWater
407 West Broad Street • P.O. Box 687 Greenville, SC 29602 • 864.241.6155 tel • 864.241.6077 fax • www.greenvillewater.com

October 22, 2020

Site Design, Inc.
Attn: Ms. Alison Brandt
225 Rocky Creek Road
Greenville, SC 29615
Via Email: abrandt@sitedesign-inc.com

RE: Water availability - Tax Map #0160000100100, 0160000100101,0160000100102 and 0160000100201– Hwy. 253 and Old Buncombe Road

Dear Ms. Brandt:

There is no water line available to the property #016000100100 (parcel B) on Brooks Avenue. Greenville Water has a 6-inch water main on Old Buncombe Road which is available to #0160000100100 (parcel A) in accordance with the Rules and Regulations of Greenville Water.

Greenville Water owns and maintains a 6-inch water line on Old Buncombe Road which is currently available to serve property #0160000100101 referenced above in accordance with the Rules and Regulations of Greenville Water.

Greenville Water owns and maintains an 8-inch water line on Hwy. 253 which is currently available to serve property #0160000100102 referenced above in accordance with the Rules and Regulations of Greenville Water.

Greenville Water owns and maintains a 6-inch water line on Old Buncombe Road, an 8-inch water line on Hwy. 253, and an 8-inch water line on Brooks Ave. which are all currently available to serve property #0160000100201 referenced above in accordance with the Rules and Regulations of Greenville Water.

System improvements will be required at the developer's expense. A substantially complete set of plans and estimated total domestic and fire demand should be submitted to Greenville Water for review for final capacity determination. A map depicting the existing water lines in this area has been enclosed for your convenience.

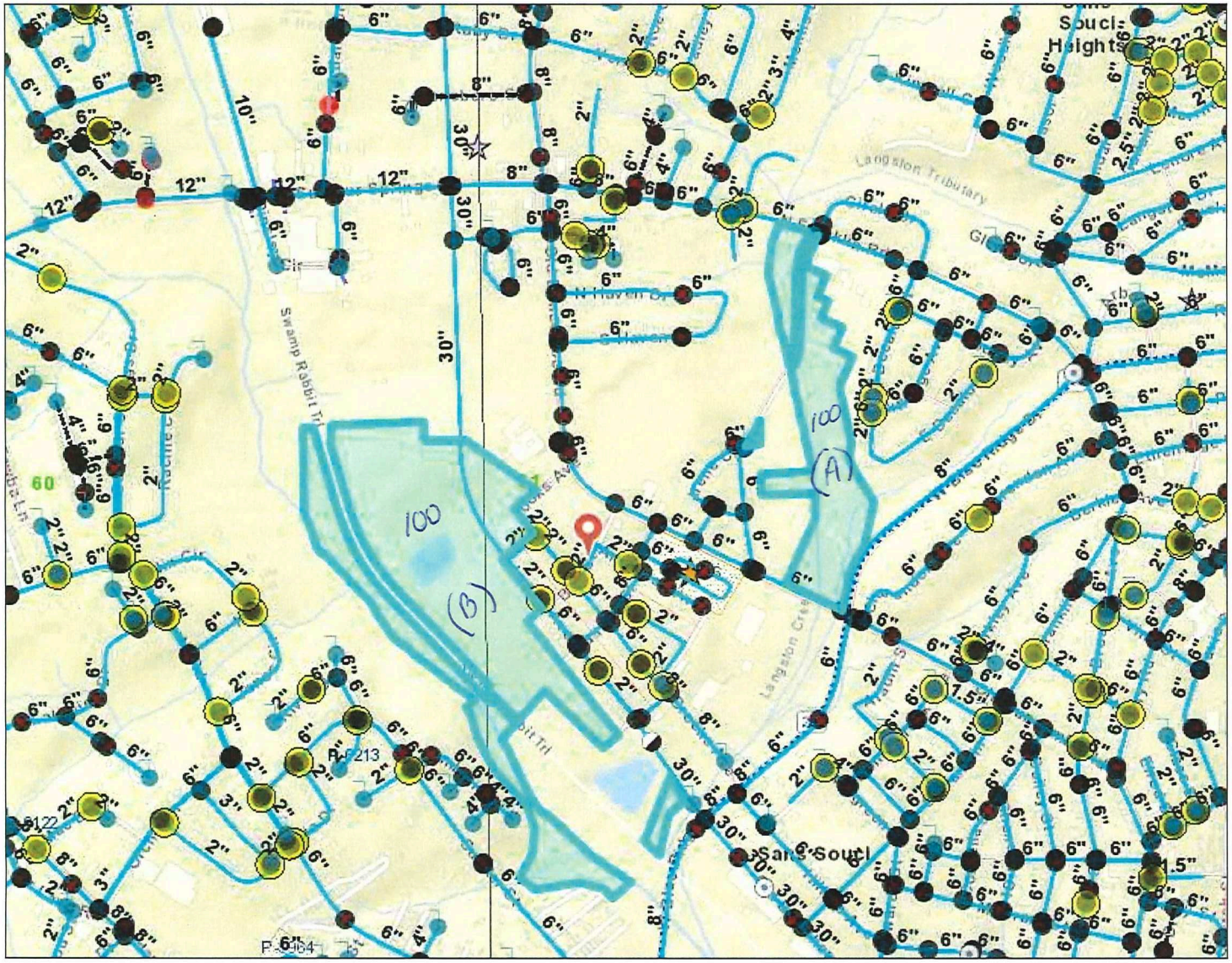
Sincerely,
GREENVILLE WATER

Craig Sollman
Hydraulics Engineer

CS/ci

016000100100

Title



Greenville Water

Legend

Butterfly Valves
- Direction Not Known
- Open Left, CLOSED
- Open Left, Open
- Open Right, CLOSED
- Open Right, Open

Altitude Valves

Air Valves

Blow Off Valves

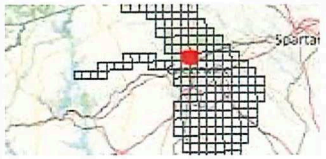
Check Valves

Flow Control Valves

Fireline Valves
- Direction Not Known
- Open Left
- Open Right

Hydrant Valves
- Direction Not Known
- Open Left

Overview Map



Notes

2471 0 1235 2471

Feet

1: 14,823

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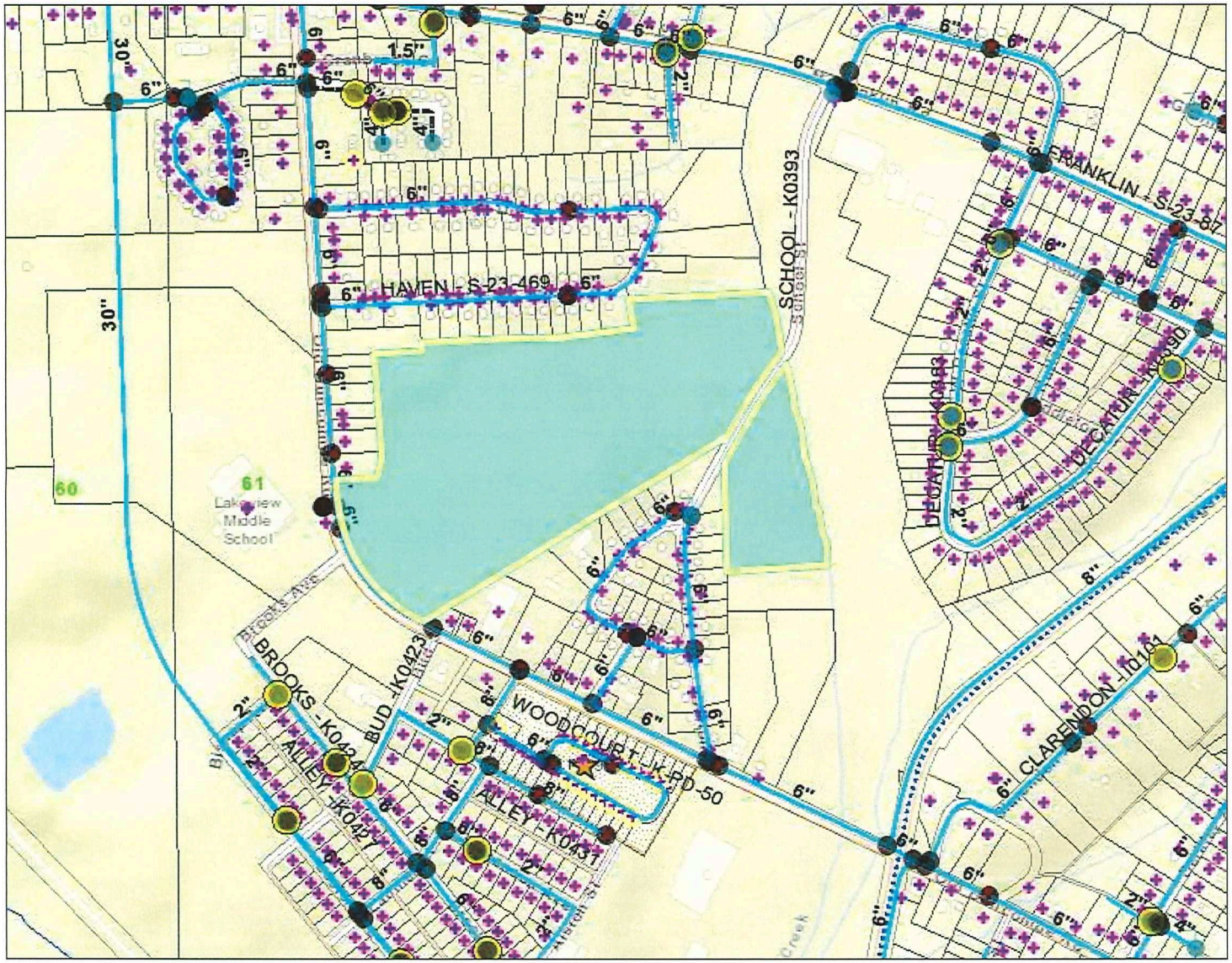
This map is not an as-built and is for general reference purposes only. Greenville Water expressly disclaims responsibility for damages or liability that may arise from the use of this map.

10/21/2020

016000010010 1

Title



Greenville Water

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Altitude Valves

Air Valves

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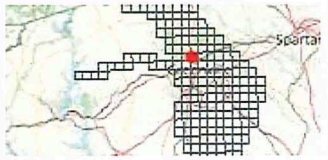
Check Valves

Flow Control Valves

Fireline Valves
- Direction Not Known
- Open Left
- Open Right

Hydrant Valves
- Direction Not Known
- Open Left

Overview Map



Notes

1235 0 618 1235
Feet

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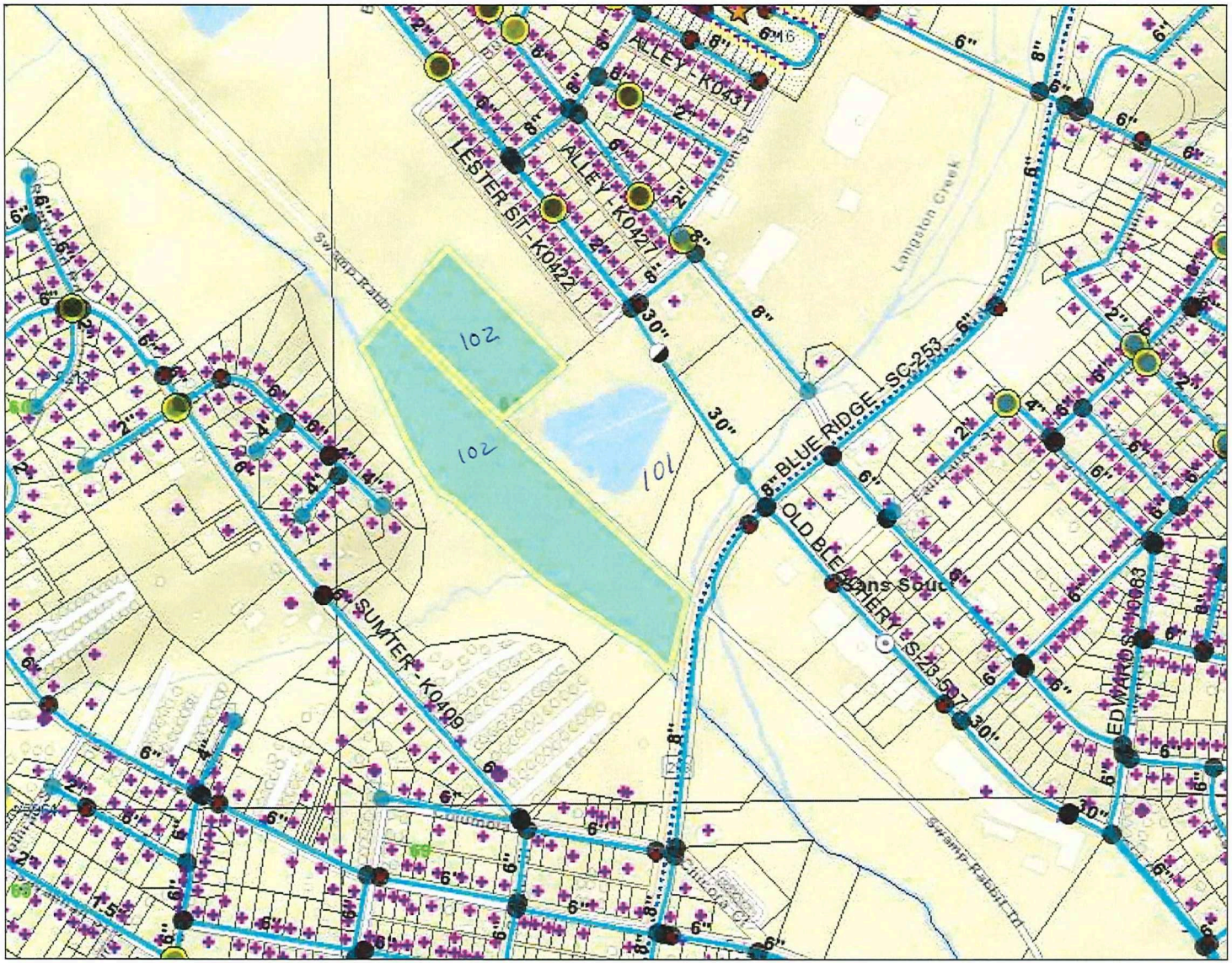
10/21/2020

0160000100102 + 101

Title



Greenville Water

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Hydrant Valves
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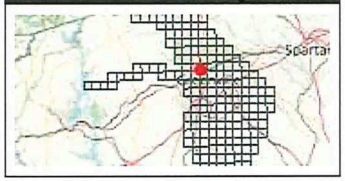

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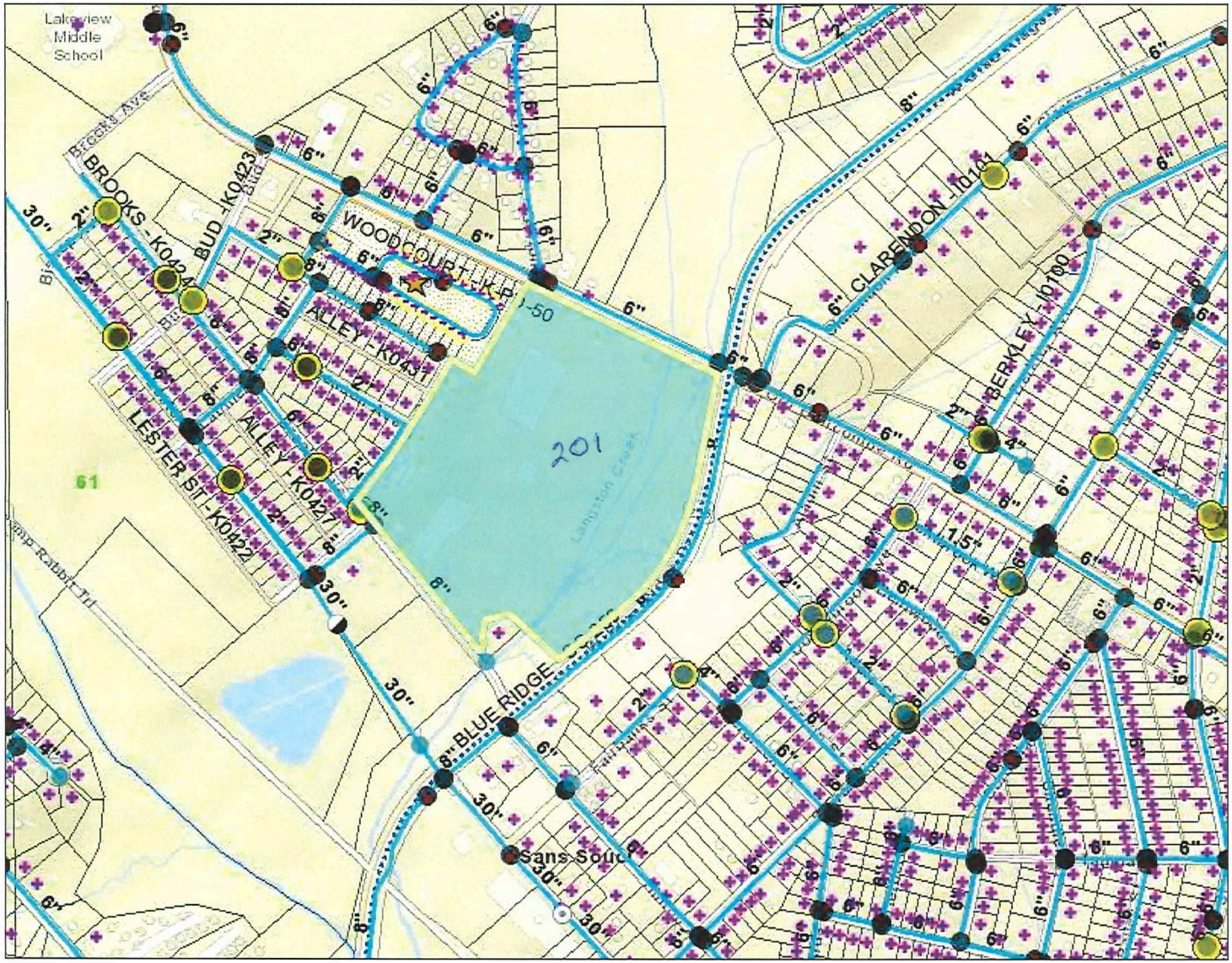
10/21/2020

016000100201

Title



Greenville Water

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- Open Right, Open

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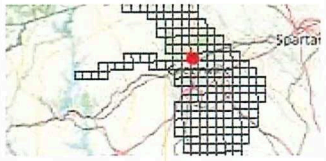

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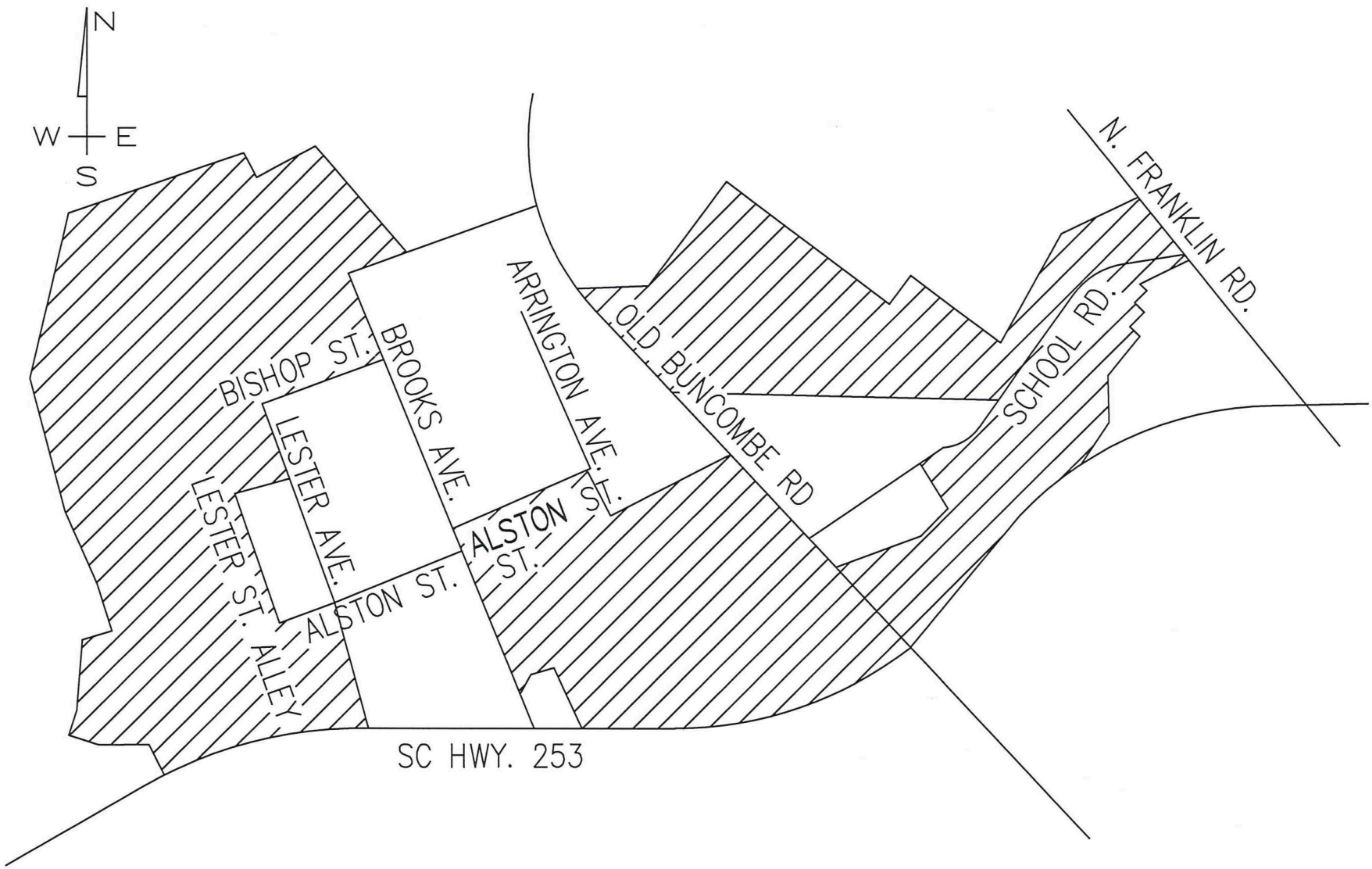
This map is not an as-built and is for general reference purposes only. Greenville Water expressly disclaims responsibility for damages or liability that may arise from the use of this map.

10/21/2020

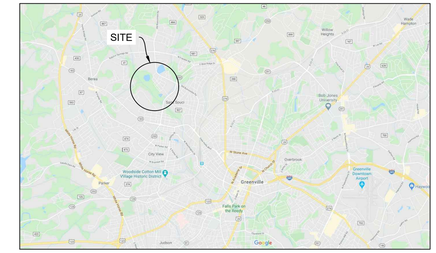


VICINITY MAP

NOT TO SCALE

PARCEL 1
PARCEL 2
PARCEL 3
PARCEL 4
PARCEL 5

Appendix B –Existing Conditions



LOCATION MAP NOT TO SCALE

SITE DATA:

PIN:	0157000200200	2.94 AC
	0160000100100	130.14 AC
	0160000100101	45.63 AC
	0160000100102	19.59 AC
	0160000100106	3.96 AC
	0160000100109	2.87 AC
	0160000100201	33.59 AC

TOTAL SITE = 238.7+/- AC

EXISTING ZONING
I-1, R-10, R-MA

DESIRED ZONING
PD

25' PROPERTY BUFFER IS SHOWN. BUILDING SETBACKS WILL BE SHOWN ON THE PLANS WHEN SUBMITTED FOR PERMITTING.

NATURAL VEGETATION WITHIN THE FLOODWAY AND IN THE 25' BUFFER WILL BE MAINTAINED.

CEMETERY TO REMAIN UNDISTURBED WITH ACCESS TO DESCENDANTS, FAMILIES, AND CARETAKERS IN PERPETUITY.

EXISTING STRUCTURES WILL BE INSPECTED WITH THE INTENT OF RENOVATION TO SERVE THE NEW DEVELOPMENT.

LEGEND

SYMBOLS

- CB — CATCH BASIN
- DI — DROP INLET
- ELEC TRANSFORMER
- × 90.0 — ELEVATION (EXIST. GRADE)
- × 90.0 — ELEVATION (FINISH GRADE)
- FIRE HYDRANT
- GM — GAS METER
- GV — GAS VALVE
- IP — IRON PIN
- LP — LIGHT POLE
- MHBS — MANHOLE (BELLSOUTH)
- MHSD — MANHOLE (SD)
- MHSS — MANHOLE (SS)
- PP — POWER POLE
- TEL — TELEPHONE
- WM — WATER METER
- WV — WATER VALVE
- STORMWATER FLOW
- TRAFFIC FLOW

ABBREVIATIONS

- BL — BUILDING LINE
- CL — CENTERLINE
- CT — CRIMP TOP
- DE — DRAINAGE EASEMENT
- EP — EDGE OF PAVEMENT
- FFE — FINISHED FLOOR ELEVATION
- FG — FINISHED GRADE
- IE — INVERT ELEVATION
- IPS — IRON PIN SET
- IPO — IRON PIN OLD
- N&C — NAIL & CAP
- OT — OPEN TOP
- RB — REBAR
- RCP — REINFORCED CONCRETE PIPE
- R/W — RIGHT OF WAY
- SSE — SANITARY SEWER EASEMENT
- SL — SETBACK LINE
- VCP — VITRIFIED CLAY PIPE

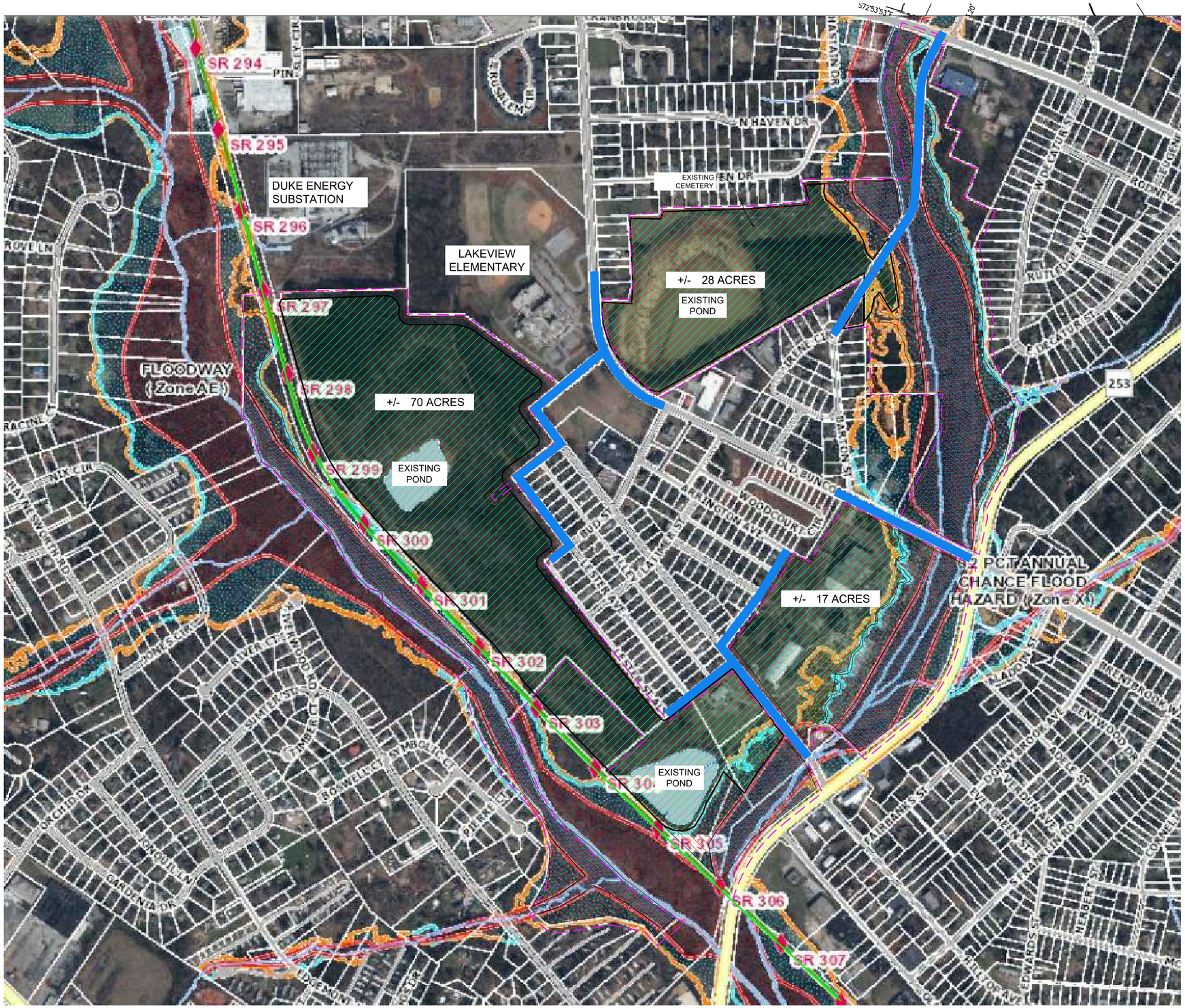
LINETYPES

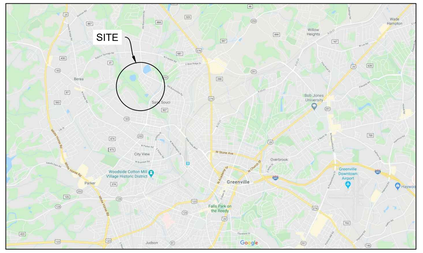
- CTV — CABLE TV
- X — CHAIN LINK FENCE (PROPOSED)
- X — CHAIN LINK FENCE (EXISTING)
- 680 — CONTOURS – EXIST. GRADE
- 678 — CONTOURS – FINISHED GRADE
- FOC — FIBER OPTIC
- FM — FORCE MAIN
- GAS — GAS LINE
- OHP — OVERHEAD POWER
- OHT — OVERHEAD TELEPHONE
- RD — ROOF DRAIN – NEW
- SS — SANITARY SEWER – EXIST.
- SS — SANITARY SEWER – NEW
- SF — SILT FENCE
- SD — STORM SEWER – EXIST.
- STORM SEWER – NEW
- UGP — UNDERGROUND POWER
- UGT — UNDERGROUND TEL
- W — WATER LINE – EXIST.
- W — WATER – NEW
- WOOD FENCE
- NPDES — LIMITS OF DISTURBANCE

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.





LOCATION MAP NOT TO SCALE

SITE DATA:

PIN:	0157000200200	2.94 AC
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TOTAL SITE = 238.7+/- AC

EXISTING ZONING
I-1, R-10, R-MA

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PD

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EXISTING STRUCTURES WILL BE INSPECTED WITH THE INTENT OF RENOVATION TO SERVE THE NEW DEVELOPMENT.

- FLOODWAY
- DEVELOPABLE FLOODPLAIN AREA
- UNRESTRICTED DEVELOPABLE AREA
- PROPERTY BOUNDARIES
- VEHICULAR CONNECTIONS
- SWAMP RABBIT TRAIL

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

GRAPHIC SCALE

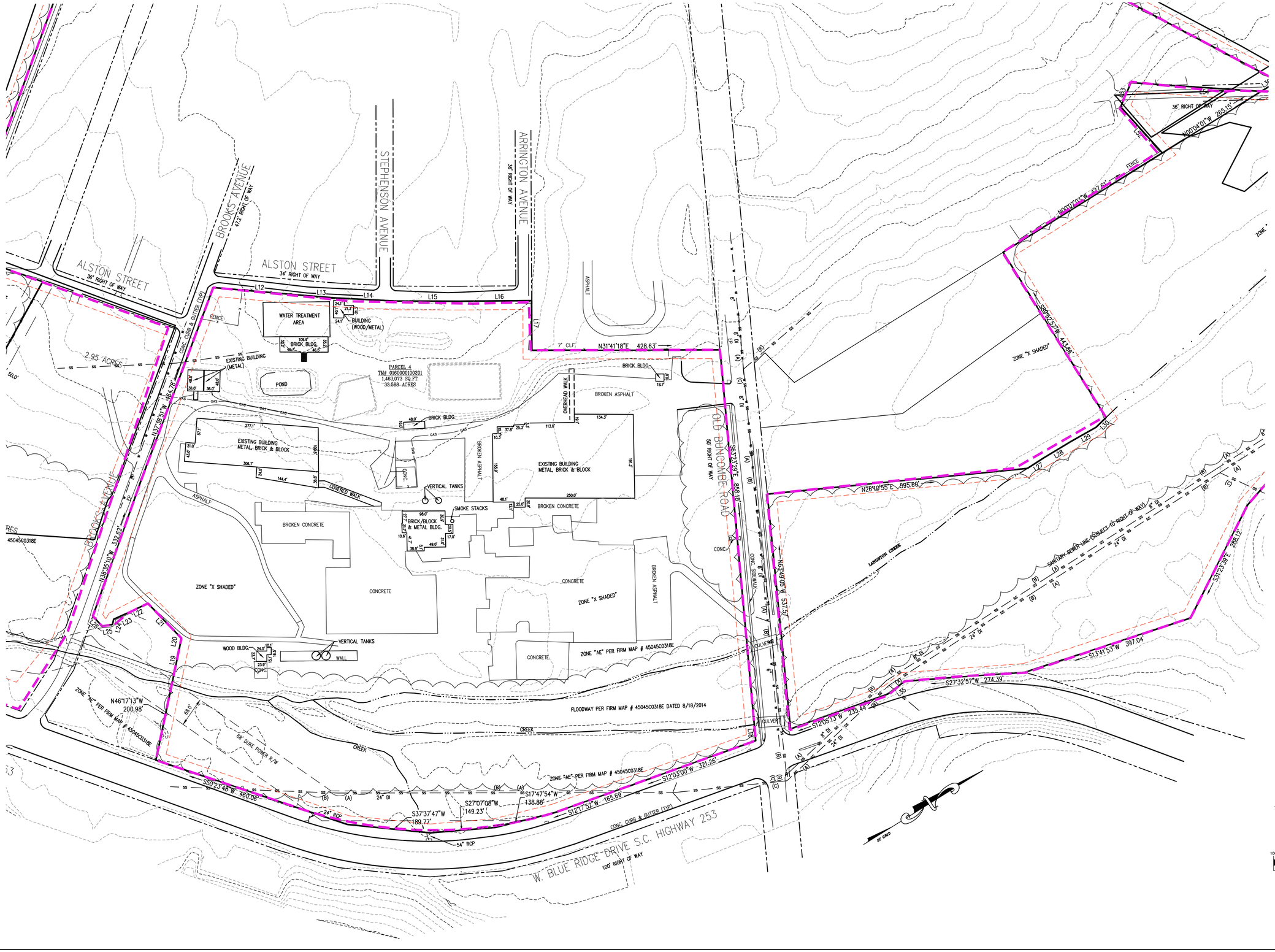
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
FEBRUARY 10, 2021

SHEET: EXISTING CONDITIONS
3 OF 8



GRAPHIC SCALE

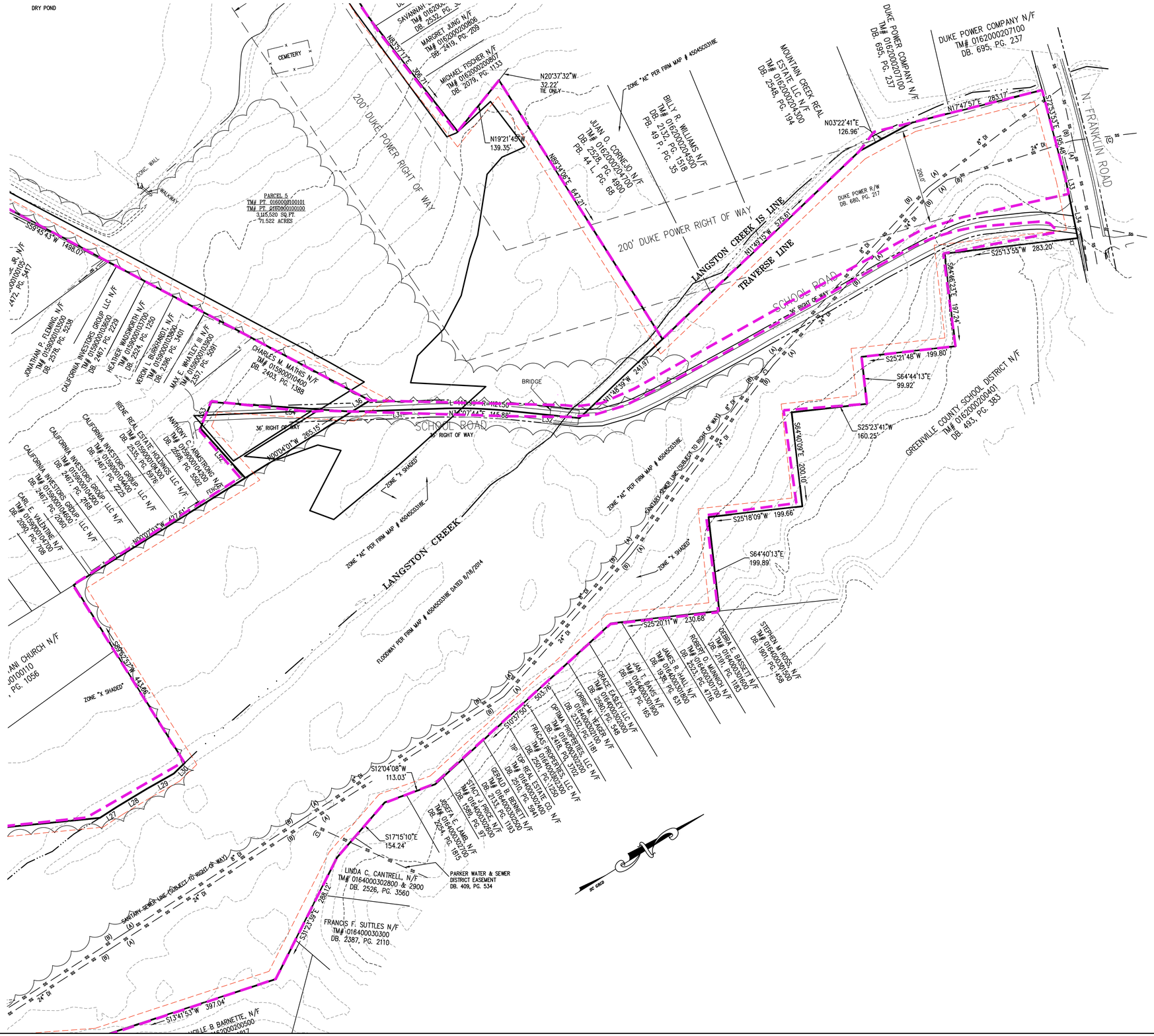
100 0 50 100 200 400

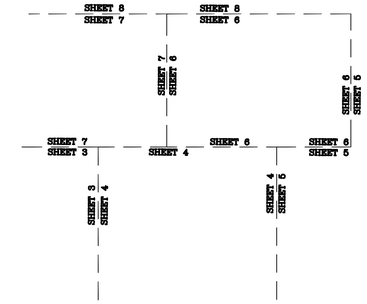
(IN FEET)
1 inch = 100 ft.

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
FEBRUARY 10, 2021

SHEET: EXISTING CONDITIONS
4 OF 8


DRY POND
CEMETERY
200' DUKE POWER RIGHT OF WAY
PARCEL 5
TM# PT. 0160000100101
TM# PT. 0160000100100
3,115,520 SQ.FT.
71.522 ACRES
LANGSTON CREEK IS LINE
TRAVERSE LINE
SCHOOL ROAD
36' RIGHT OF WAY
BRIDGE
LANGSTON CREEK
FLOODWAY PER FIRM MAP # 45045C0318E DATED 8/18/2014
ZONE "AE" PER FIRM MAP # 45045C0318E
ZONE "X SHADED"
ZONE "X"
N. FRANKLIN ROAD
DUKE POWER COMPANY N/F
TM# 0162000207100
DB. 695, PG. 237
MOUNTAIN CREEK REAL ESTATE LLC N/F
TM# 0162000204300
DB. 2598, PG. 194
BILLY R. WILLIAMS N/F
TM# 0162000204300
DB. 2532, PG. 1518
PB. 49 P, PG. 35
JUAN O. CORNEJO N/F
TM# 0162000204700
DB. 2528, PG. 4000
PB. 44 L, PG. 68
MARGRET JUNG N/F
TM# 0162000206906
DB. 2419, PG. 209
MICHAEL FITCHER N/F
TM# 0162000208607
DB. 2079, PG. 1133
GREENVILLE COUNTY SCHOOL DISTRICT N/F
TM# 0162000200401
DB. 4943, PG. 383
LINDA C. CANTRELL, N/F
TM# 0164000302800 & 2900
DB. 2526, PG. 3560
PARKER WATER & SEWER DISTRICT EASEMENT
DB. 409, PG. 534
FRANCIS F. SUTTLES N/F
TM# 0164000303000
DB. 2387, PG. 2110
SEWER


SHEET 8
SHEET 7
SHEET 8
SHEET 6
SHEET 7
SHEET 6
SHEET 6
SHEET 5
SHEET 7
SHEET 3
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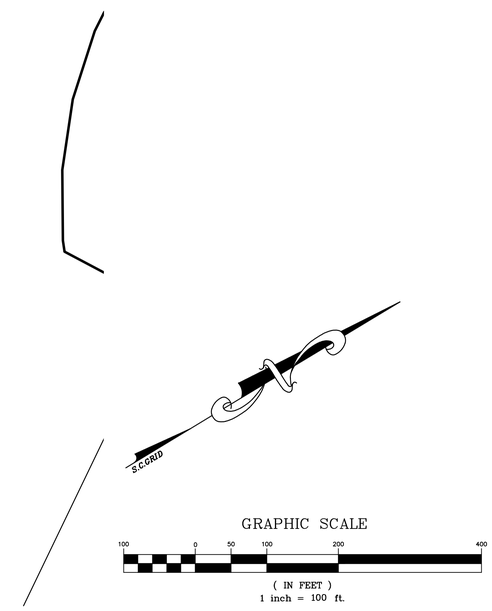
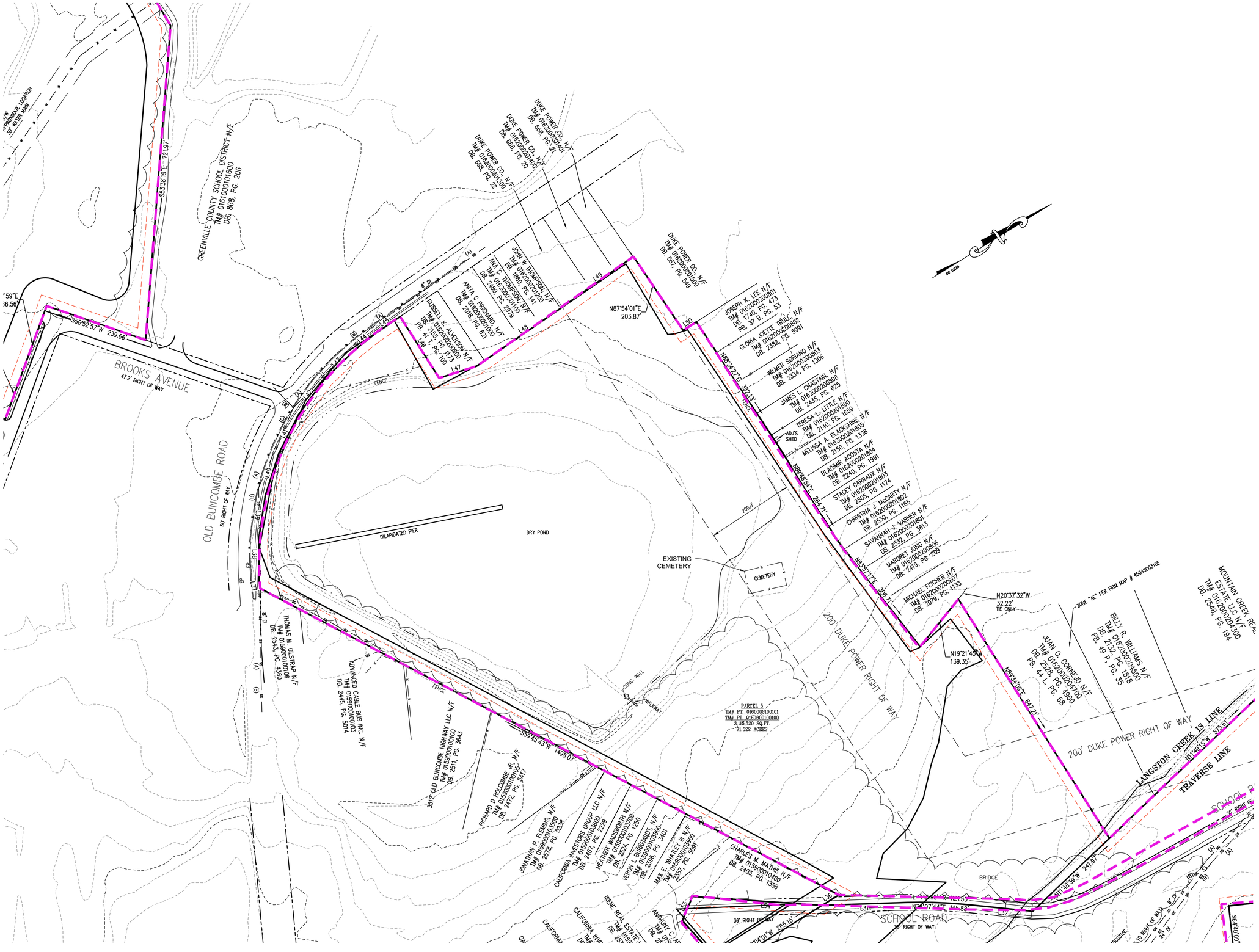
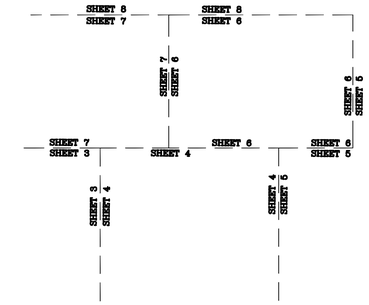
SHEET 4
SHEET 4
SHEET 5


S.C.GRID
GRAPHIC SCALE
100
0
50
100
200
400
(IN FEET)
1 inch = 100 ft.



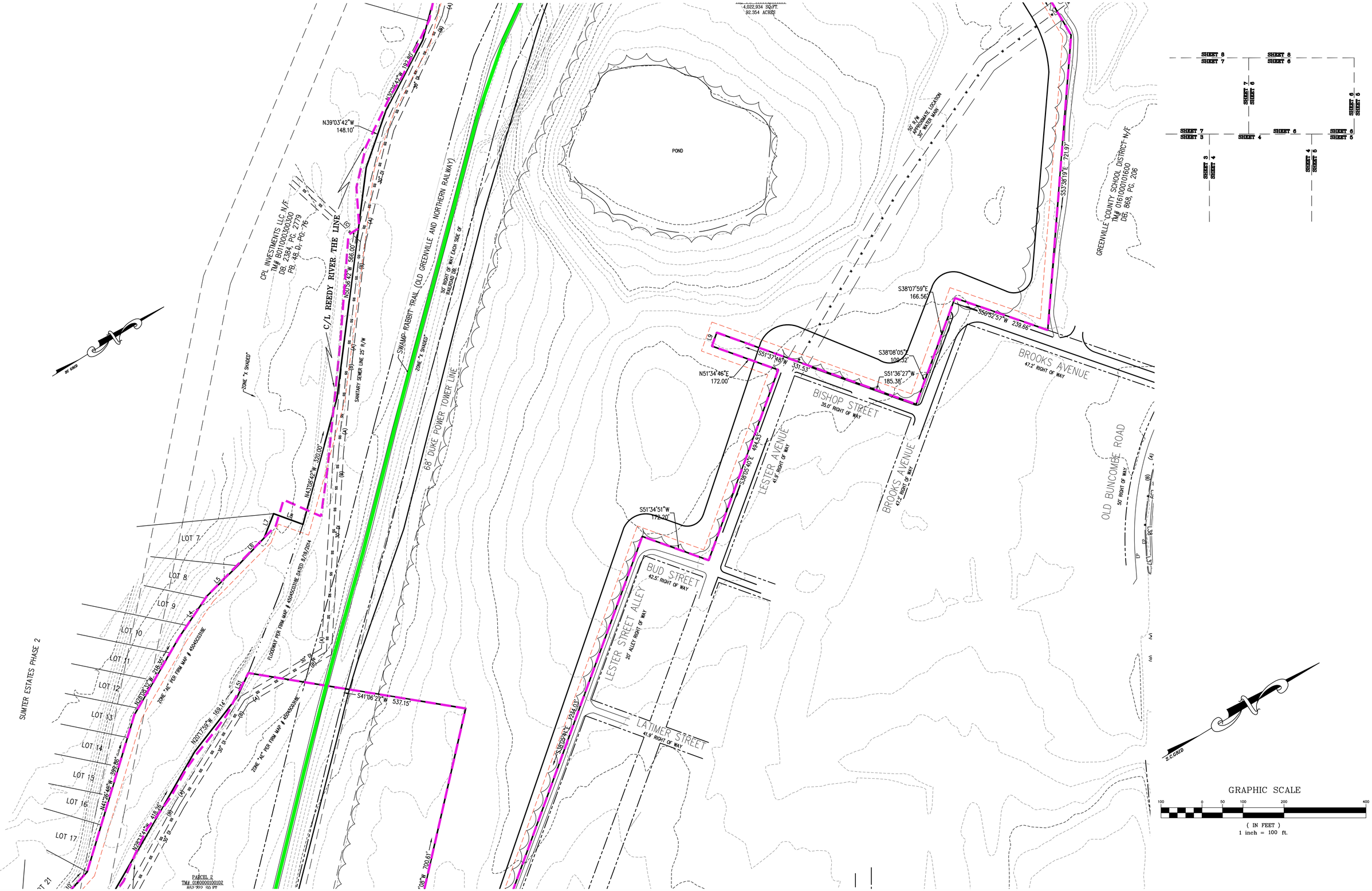


CEMETERY TO REMAIN UNDISTURBED WITH ACCESS TO DESCENDANTS, FAMILIES, AND CARETAKERS IN PERPETUITY.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.



...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
FEBRUARY 10, 2021

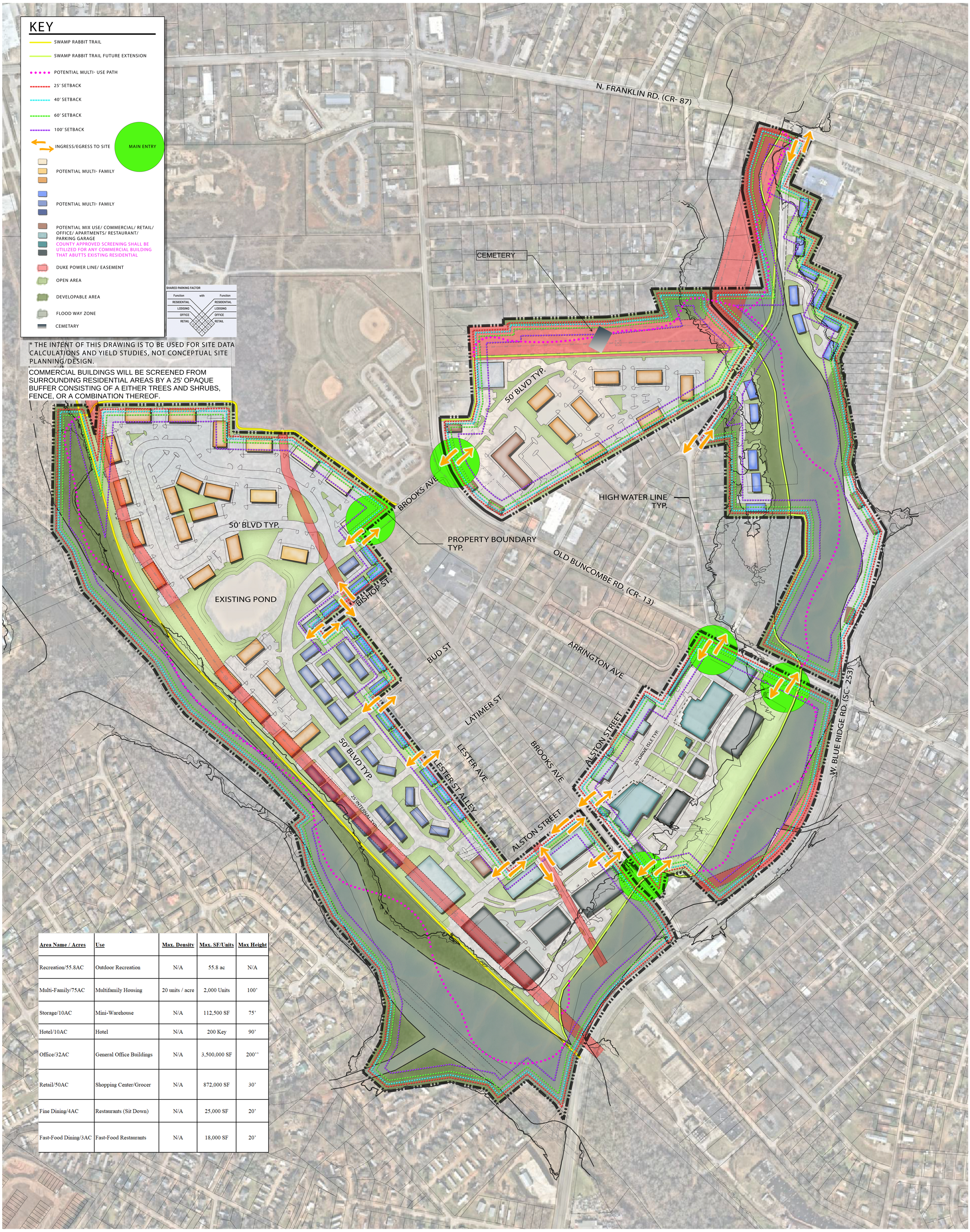
SHEET: EXISTING CONDITIONS
7 OF 8

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
FEBRUARY 10, 2021

SHEET: EXISTING CONDITIONS
8 OF 8

Appendix C – Planned Development Preliminary Development Plan



Area Name / Acres	Use	Max. Density	Max. SF/Units	Max Height
Recreation/55.8AC	Outdoor Recreation	N/A	55.8 ac	N/A
Multi-Family/75AC	Multifamily Housing	20 units / acre	2,000 Units	100'
Storage/10AC	Mini-Warehouse	N/A	112,500 SF	75'
Hotel/10AC	Hotel	N/A	200 Key	90'
Office/32AC	General Office Buildings	N/A	3,500,000 SF	200''
Retail/50AC	Shopping Center/Grocer	N/A	872,000 SF	30'
Fine Dining/4AC	Restaurants (Sit Down)	N/A	25,000 SF	20'
Fast-Food Dining/3AC	Fast-Food Restaurants	N/A	18,000 SF	20'

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
JANUARY 7, 2021

SHEET: 1 OF 4

50' BLVD

BROOKS AVE

PROPERTY BOUNDAR
TYP.

50' BLVD TYP.

EXISTING POND

BISHOP ST

BUD ST

LATIMER S

LESTER AVE

LESTER ST ALLEY

50' BLVD TYP.

25' INTERNAL TYP.

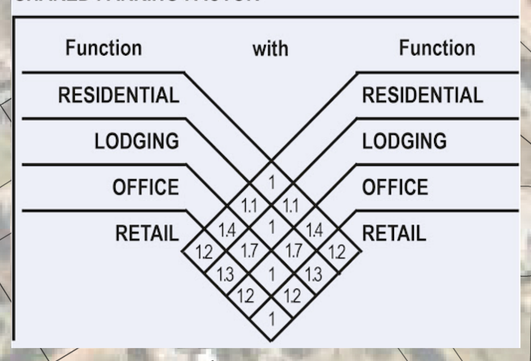
ALSTO

KEY

- SWAMP RABBIT TRAIL
- SWAMP RABBIT TRAIL FUTURE EXTENSION
- POTENTIAL MULTI- USE PATH
- 25' SETBACK
- 40' SETBACK
- 60' SETBACK
- 100' SETBACK
- INGRESS/EGRESS TO SITE
- MAIN ENTRY
- POTENTIAL MULTI- FAMILY
- POTENTIAL MULTI- FAMILY
- POTENTIAL MIX USE/ COMMERCIAL/ RETAIL/ OFFICE/ APARTMENTS/ RESTAURANT/ PARKING GARAGE
  COUNTY APPROVED SCREENING SHALL BE UTILIZED FOR ANY COMMERCIAL BUILDING THAT ABUTTS EXISTING RESIDENTIAL
- DUKE POWER LINE/ EASEMENT
- OPEN AREA
- DEVELOPABLE AREA
- FLOOD WAY ZONE
- CEMETARY

Area Name / Acres	Use	Max. Density	Max. SF/Units	Max Height
Recreation/55.8AC	Outdoor Recreation	N/A	55.8 ac	N/A
Multi-Family/75AC	Multifamily Housing	20 units / acre	2,000 Units	100'
Storage/10AC	Mini-Warehouse	N/A	112,500 SF	75'
Hotel/10AC	Hotel	N/A	200 Key	90'
Office/32AC	General Office Buildings	N/A	3,500,000 SF	200''
Retail/50AC	Shopping Center/Grocer	N/A	872,000 SF	30'
Fine Dining/4AC	Restaurants (Sit Down)	N/A	25,000 SF	20'
Fast-Food Dining/3AC	Fast-Food Restaurants	N/A	18,000 SF	20'

SHARED PARKING FACTOR



COMMERCIAL BUILDINGS WILL BE SCREENED FROM SURROUNDING RESIDENTIAL AREAS BY A 25' OPAQUE BUFFER CONSISTING OF A EITHER TREES AND SHRUBS, FENCE, OR A COMBINATION THEREOF.

NORTH

0' 40' 80' 160'

...ON THE TRAIL Greenville

mcmillan | pazdan | smith ARCHITECTURE

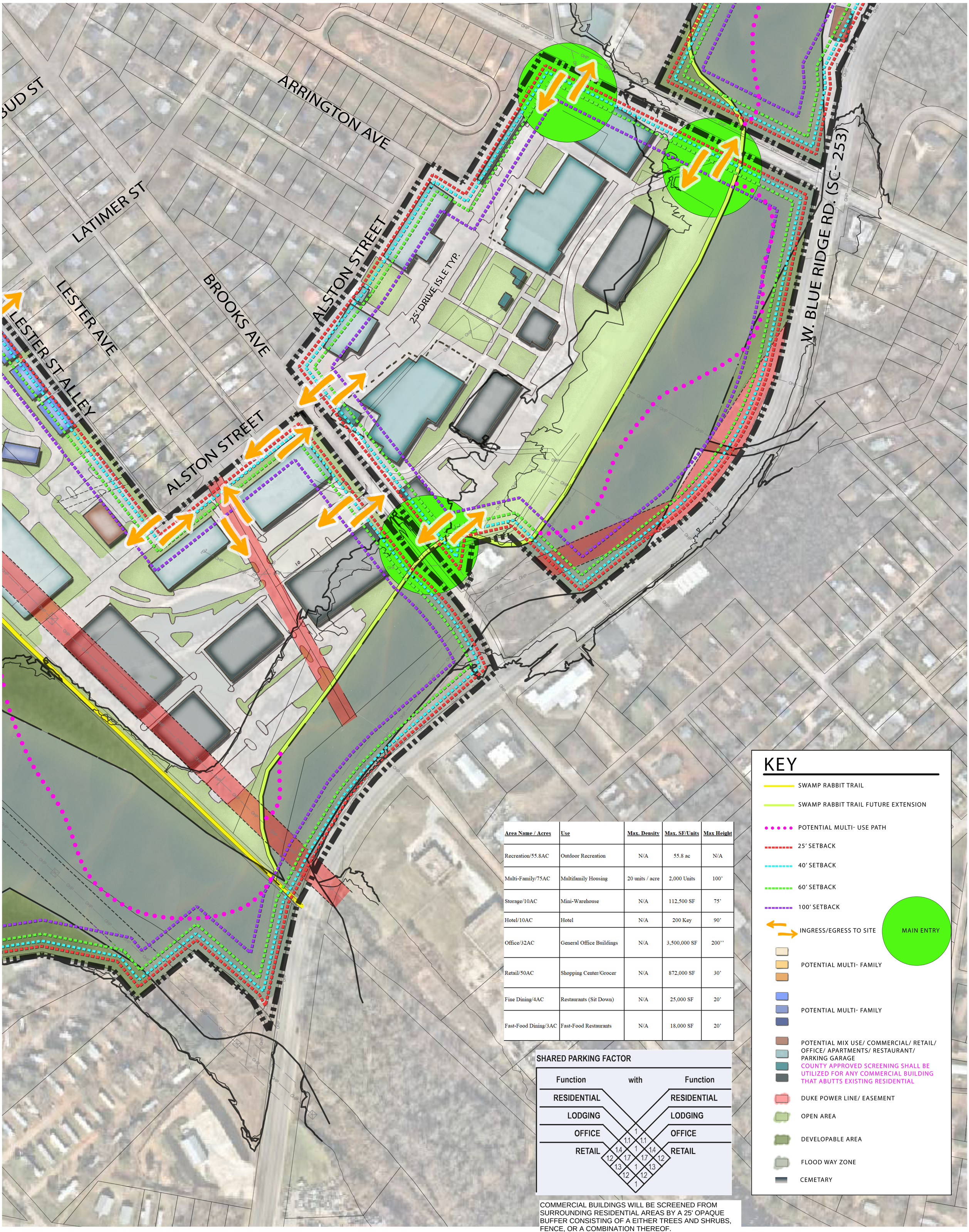
Kimley»Horn

SITE DESIGN, INC.

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
JANUARY 7, 2021

SHEET: 2 OF 4



Area Name / Acres	Use	Max. Density	Max. SF/Units	Max Height
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Hotel/10AC	Hotel	N/A	200 Key	90'
Office/32AC	General Office Buildings	N/A	3,500,000 SF	200''
Retail/50AC	Shopping Center/Grocer	N/A	872,000 SF	30'
Fine Dining/4AC	Restaurants (Sit Down)	N/A	25,000 SF	20'
Fast-Food Dining/3AC	Fast-Food Restaurants	N/A	18,000 SF	20'

COMMERCIAL BUILDINGS WILL BE SCREENED FROM SURROUNDING RESIDENTIAL AREAS BY A 25' OPAQUE BUFFER CONSISTING OF A EITHER TREES AND SHRUBS, FENCE, OR A COMBINATION THEREOF.

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
JANUARY 7, 2021

SHEET: 3 OF 4

KEY

- SWAMP RABBIT TRAIL
- SWAMP RABBIT TRAIL FUTURE EXTENSION
- POTENTIAL MULTI- USE PATH
- 25' SETBACK
- 40' SETBACK
- 60' SETBACK
- 100' SETBACK
- INGRESS/EGRESS TO SITE
- MAIN ENTRY
- POTENTIAL MULTI- FAMILY
- POTENTIAL MULTI- FAMILY
- POTENTIAL MIX USE/ COMMERCIAL/ RETAIL/ OFFICE/ APARTMENTS/ RESTAURANT/ PARKING GARAGE
  COUNTY APPROVED SCREENING SHALL BE UTILIZED FOR ANY COMMERCIAL BUILDING THAT ABUTTS EXISTING RESIDENTIAL
- DUKE POWER LINE/ EASEMENT
- OPEN AREA
- DEVELOPABLE AREA
- FLOOD WAY ZONE
- CEMETARY

SHARED PARKING FACTOR

Function	with	Function
RESIDENTIAL		RESIDENTIAL
LODGING		LODGING
OFFICE		OFFICE
RETAIL		RETAIL

1
1.1 1.1
1.4 1 1.4
1.2 1.7 1.7 1.2
1.3 1 1.3
1.2 1.2
1

COMMERCIAL BUILDINGS WILL BE SCREENED FROM SURROUNDING RESIDENTIAL AREAS BY A 25' OPAQUE BUFFER CONSISTING OF A EITHER TREES AND SHRUBS, FENCE, OR A COMBINATION THEREOF.

CEMETERY

50' BLVD TYP.

HIGH WATER LINE TYP.

PROPERTY BOUNDARY TYP.

OLD BUNCOMBE RD. (CR- 13)

ARRINGTON AVE

RD. (SC- 253)

Area Name / Acres	Use	Max. Density	Max. SF/Units	Max Height
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NORTH

0' 40' 80' 160'

...ON THE TRAIL Greenville

mcmillan | pazdan | smith ARCHITECTURE

Kimley»Horn

SITE DESIGN, INC.

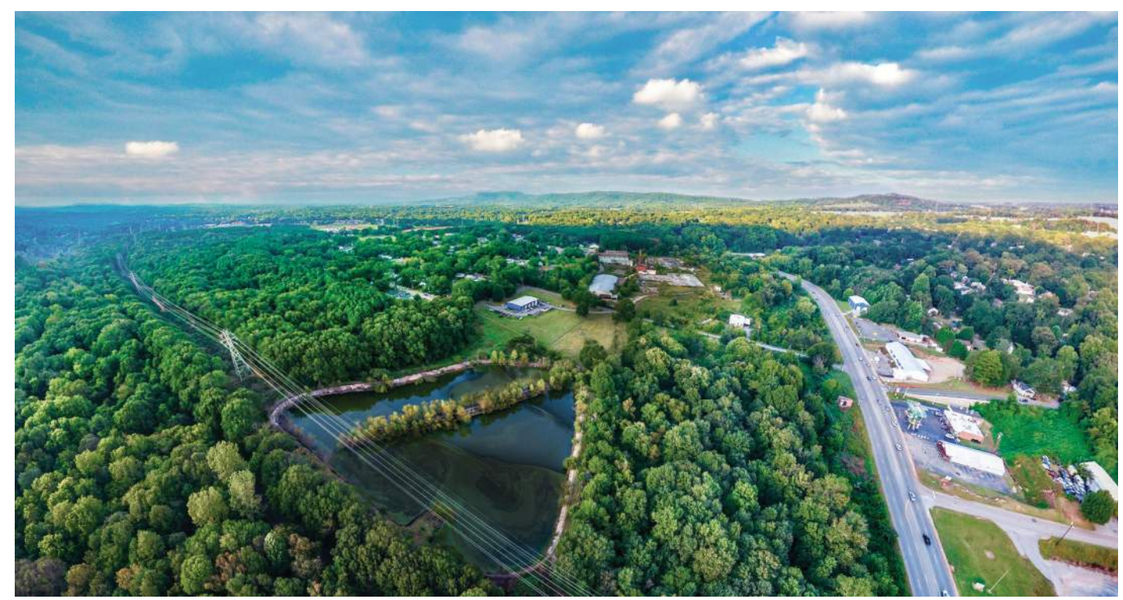
...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

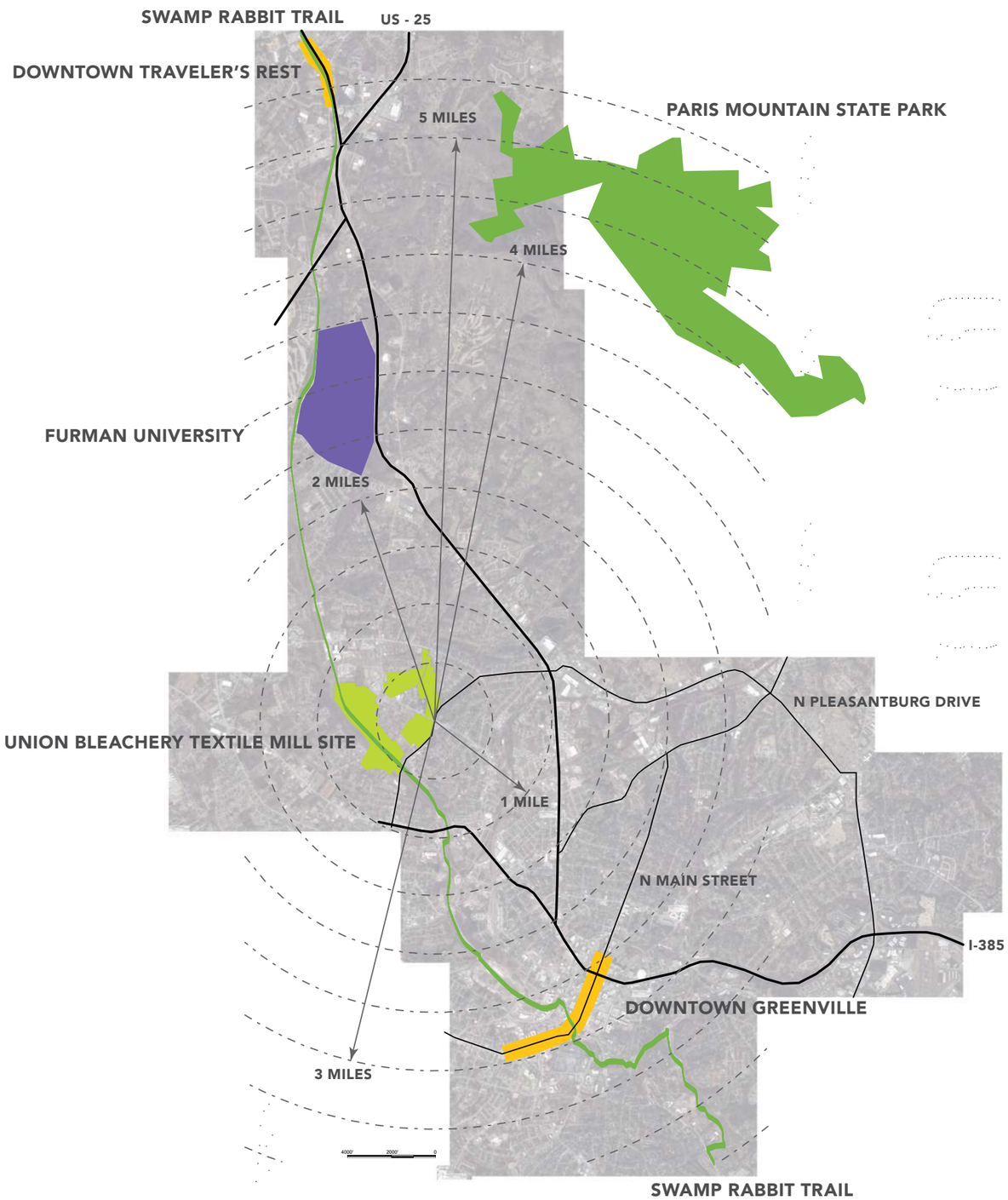
PROPOSAL
JANUARY 7, 2021

SHEET: 4 OF 4

Appendix D – Development Sample Study

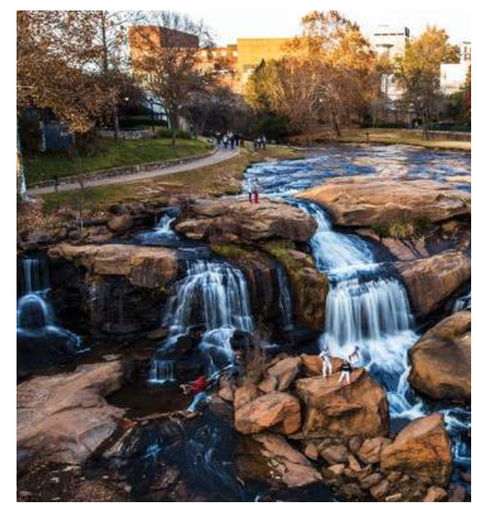
UNION BLEACHERY REVITALIZATION PROJECT





At the heart of South Carolina's Upcountry, and conveniently located halfway between Charlotte, NC and Atlanta, GA, lies the City of Greenville, S.C. Over the last decade the City, and surrounding areas, have experienced unprecedented growth as companies from around the world have relocated to the Greenville/Spartanburg area. The area's focus on recreation, quality of life, balance between business growth and southern traditional lifestyle has led to a surge in residents, and with it a demand for new development. But, as Greenville expands it does so while elegantly including the restoration of historic places throughout the county.

Located a mere 2.5 miles from Downtown and 3 miles from Furman University, lies the most significant single redevelopment opportunity within the urban infill area of Greenville County, the site of the former Union Bleachery Textile Mill. Project Phoenix will resurrect this site, which after a century of industrial uses and 2 decades of neglect sits vacant, surrounded by growth on all sides. Straddling the Swamp Rabbit Trail for nearly a mile Phoenix will rise from the ashes of the burnt down mill site and be a major contributor to life along the Trail. The development will perfectly compliment Greenville's healthy lifestyles initiatives and multiple modes of transportation.



Multi-Family Residential

10 ACADEMY APARTMENTS

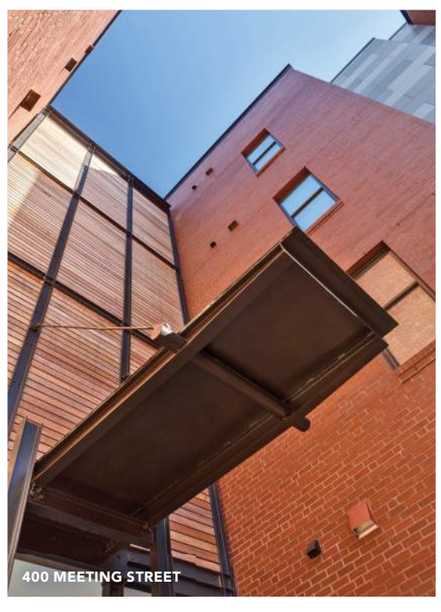
100 EAST APARTMENTS

LEE WALKER HEIGHTS
In collaboration with David Baker Architects

ROGERS STREET

RIVER ROCK CONDOS

MAIN + STONE APARTMENTS


400 MEETING STREET

JUDSON MILL

...ON THE TRAIL Greenville

mcmillan | pazdan | smith ARCHITECTURE

Kimley»Horn

SITE DESIGN, INC.

...ON THE TRAIL
GREENVILLE, SOUTH CAROLINA

PROPOSAL
JANUARY 7, 2021

SHEET: MULTI-FAMILY RESIDENTIAL

Commerical/ Retail

CLAUSSEN BAKERY

RAPPAHANNOCK OYSTER BAR

FERRY WHARF OFFICE BUILDING

82 MARY

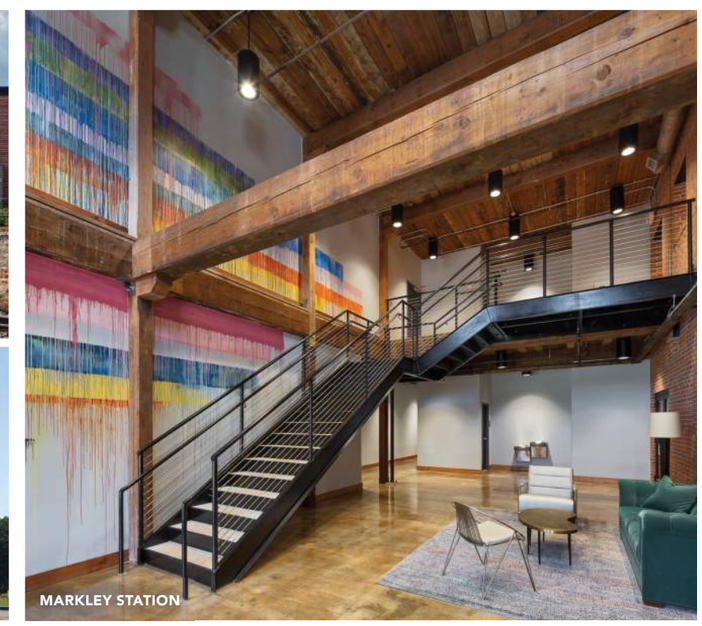
GATHER GVL

RIVETER/ CLIMBING GYM + MOUNTAIN CLIMBING

AUG SMITH BUILDING

MARKLEY STATION

FDTC + THE DARLA MOORE FOUNDATION CONTINUUM, LEARNING CENTER

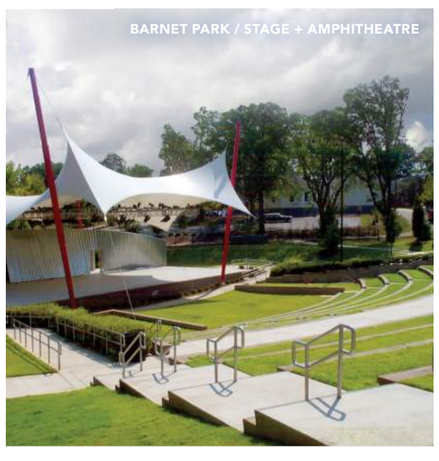

MARKLEY STATION

Outdoor/ Recreation

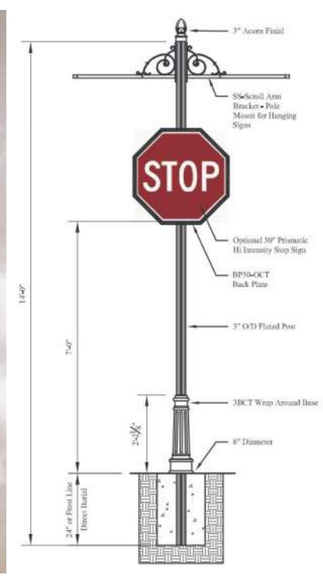
KEYS VILLAGE / YEE-HAW BREWERY

FREYARD BIERGARTEN

DUNWOODY NATURE CENTER


BARNET PARK / STAGE + AMPHITHEATRE

Signage/ Materiality



Lighting

Appendix E – Traffic Impact Study

On The Trail
Planned Development

Greenville, SC

Traffic Impact Analysis

Prepared for:

Cone Mills Acquisition Group, LLC

Prepared by:

Kimley-Horn

January 2021
© Kimley-Horn and Associates, Inc.
802 Gervais Street, Suite 201
Columbia, South Carolina, 29201

Kimley»Horn

On The Trail
Planned Development

Greenville, SC

Traffic Impact Analysis

Prepared for:

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January 2021
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6 JANUARY 2021

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Executive Summary

The purpose of this traffic impact analysis is to review the vehicular traffic impacts resulting from a proposed mixed-use development along Old Buncombe Road (S-13) in Greenville County, SC. The objectives of this study are to:

- Estimate trip generation and distribution for the proposed development
- Perform intersection capacity analyses for the identified study area
- Determine the potential traffic impacts of the proposed development
- Develop recommendations for needed roadway and operational improvements to accommodate the proposed development's traffic impacts

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of this development in accordance with the traffic study guidelines in the South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS) and the transportation improvements that may be required to accommodate these impacts.

With a masterplan development of this magnitude, changes can and will happen to the plan. Therefore, with each plan development submittal, a technical memorandum, prepared by a professional engineer shall be provided. The technical memorandum will be considered an addendum to the masterplan TIS, and as such will spell out the required infrastructure mitigation needed for the specific development submittal/phase. This will allow the development to provide an accurate assessment of the mitigation needs reflective of potential changes in the market and the development masterplan.

The proposed development site is located west of SC 253, and is bounded by North Franklin Road (S-87) to the north and the Swamp Rabbit Trail to the south. The proposed development site is split by Old Buncombe Road (S-13) and Brooks Avenue. The specific land uses and intensities are yet to be determined; however, for the purposes of this analysis, we assumed the buildout year of 2035 and will be accessed via six (6) full-access driveways. The proposed development consists of the following land uses and intensities:

- 112,500 SF Mini Warehouse
- 1,660 Units of Multifamily Housing (Mid-Rise)
- 200 Room Hotel
- 3,480,000 SF General Office Space
- 872,200 SF Retail Space
- 18,000 SF High Turnover (Sit Down) Restaurants
- 18,000 SF Fast Food Restaurants with Drive-Through

This report summarizes the analyses of existing year conditions during the AM and PM peak hours at the following intersections:

- Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13) – Unsignalized

- School Road at North Franklin Road (S-87) – Unsignalized
- Old Buncombe Road (S-13) at SC 253 – Signalized
- Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87) – Signalized
- SC 253 at Brooks Avenue/Hilltop Avenue – Unsignalized

Analyses of future year conditions during the AM and PM peak hours are summarized at the below intersections, in addition to the previously mentioned intersections:

- Driveway #2 at Old Buncombe Road (S-13)
- Driveway #3/#4 at Brooks Avenue
- Driveway #5 at Brooks Avenue
- Driveway #6 at SC 253

Based on the results of the analyses contained within the report, the following improvements are likely to be needed to mitigate impacts of the full buildout of the development:

<u>Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13)</u>

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 300-ft
    - Convert the existing shared left/right lane to a shared through/left lane
    - Right-turn lane with a storage length of 325-ft
- Construct the following along the westbound approach (Driveway #1):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/left lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the northbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 150-ft
- Construct the following along the southbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 350-ft

<u>Old Buncombe Road (S-13) at SC 253</u>

- Construct the following along the eastbound approach (Old Buncombe Road):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Additional through lane
    - Dual right-turn lanes with storage lengths of 300-ft

- Construct the following along the westbound approach (Old Buncombe Road):
  - Convert the existing left-turn lane to an additional through lane and construct a left-turn lane with a storage length of 250-ft
- Construct the following along the northbound approach (SC 253):
  - Dual left-turn lanes with storage lengths of 500-ft
- Construct the following along the southbound approach (SC 253):
  - Right-turn lane with a storage length of 350-ft

Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87)

- Construct the following along the eastbound approach (Sulphur Springs Road):
  - Right-turn lane with a storage length of 350-ft
- Construct the following along the westbound approach (North Franklin Road):
  - Modify the existing left-turn signal operation from permitted only to permitted+protected
- Construct the following along the northbound approach (Old Buncombe Road):
  - Dual left-turn lanes with storage lengths of 350-ft
  - Additional through lane
- Construct the following along the southbound approach (Old Buncombe Road):
  - Additional through lane

SC 253 at Brooks Avenue/Hilltop Avenue

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
  - Dual left-turn lanes with storage lengths of 250-ft
  - Right-turn lane
- Construct the following along the northbound approach (SC 253):
  - Dual left-turn lanes with storage lengths of 250-ft
- Construct the following along the southbound approach (SC 253):
  - Left-turn lane with a storage length of 150-ft
  - Right-turn lane with a storage length of 300-ft

Driveway #2 at Old Buncombe Road (S-13)

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Old Buncombe Road):
  - Additional through lane
- Construct the following along the westbound approach (Old Buncombe Road):
  - Dual left-turn lanes with storage lengths of 250-ft
  - Additional through lane

- Construct the following along the northbound approach (Driveway #2):
    - Dual left-turn lanes with a 250-ft storage length and an egress lane
    - Dual right-turn lanes with a 350-ft storage length and an egress lane
    - Two ingress lanes

Driveway #3/#4 at Brooks Avenue

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 150-ft
- Construct the following along the westbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 250-ft
    - Right-turn lane
- Construct the following along the northbound approach (Driveway #4):
    - Left-turn lane with a storage length of 150-ft
    - Through lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the southbound approach (Driveway #3):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/right lane
    - Single ingress lane

Driveway #5 at Brooks Avenue

- Construct the following along the westbound approach (Brooks Avenue):
    - Stop controlled approach
    - Left-turn lane with a storage length of 150-ft
- Construct the following along the northbound approach (Driveway #5):
    - Single ingress lane and a single egress lane

Driveway #6 at SC 253

- Construct the following along the eastbound approach (Driveway #6):
    - Stop controlled approach
    - Left-turn lane with a storage length of 150-ft
    - Right-turn lane
    - Single ingress lane
- Construct the following along the northbound approach (SC 253):
    - Left-turn lane with a storage length of 150-ft

Additionally, to accommodate multimodal travel, it is recommended that the development provide access points to the Swamp Rabbit Trail along the south boundary of the site. These access points should be coordinated with Greenville County Parks, Recreation, and Tourism.

1. Introduction

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of a proposed mixed-use development along Old Buncombe Road (S-13) in Greenville County, SC in accordance with the traffic study guidelines in the South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS), and identify the transportation improvements that may be required to accommodate these impacts. This report presents trip generation, distribution, capacity analyses, and recommendations for transportation improvements required to meet anticipated traffic demands.

With a masterplan development of this magnitude, changes can and will happen to the plan. Therefore, with each plan development submittal, a technical memorandum, prepared by a professional engineer shall be provided. The technical memorandum will be considered an addendum to the masterplan TIS, and as such will spell out the required infrastructure mitigation needed for the specific development submittal/phase. This will allow the development to provide an accurate assessment of the mitigation needs reflective of potential changes in the market and the development masterplan.

The proposed development site is located west of SC 253, and is bounded by North Franklin Road (S-87) to the north and the Swamp Rabbit Trail to the south. The proposed development site is split by Old Buncombe Road (S-13) and Brooks Avenue. The specific land uses and intensities are yet to be determined; however, for the purposes of this analysis, we assumed the buildout year of 2035 and will be accessed via six (6) full-access driveways. The proposed development consists of the following land uses and intensities:

- 112,500 SF Mini Warehouse
- 1,660 Units of Multifamily Housing (Mid-Rise)
- 200 Room Hotel
- 3,480,000 SF General Office Space
- 872,200 SF Retail Space
- 18,000 SF High Turnover (Sit Down) Restaurants
- 18,000 SF Fast Food Restaurants with Drive-Through

Based on the proposed master plan, shown in Figure 2, it was assumed that the proposed development will be accessed via the following driveways:

- Two (2) full access driveways along Old Buncombe Road (S-13)
- Two (2) full access driveways along Brooks Avenue
- One (1) full access driveway along SC 253, north of Old Buncombe Road (S-13)
- One (1) full access driveway that will utilize the intersection of School Road at North Franklin Road (S-87) to the north of the site

The location of the proposed development is included in Figure 1.

2. Inventory

2.1. *Study Area*

The study area for this traffic impact analysis (TIA) includes the following intersections:

1. Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13)
2. School Road at North Franklin Road (S-87)
3. Old Buncombe Road (S-13) at SC 253
4. Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87)
5. SC 253 at Brooks Avenue/Hilltop Avenue
6. Driveway #2 at Old Buncombe Road (S-13)
7. Driveway #3/#4 at Brooks Avenue
8. Driveway #5 at Brooks Avenue
9. Driveway #6 at SC 253

This study area was determined based on engineering judgement and was established with input from Greenville County and SCDOT.

Figure 1 shows the study area intersections for this analysis, and Figure 2 shows the proposed site plan for the development.

2.2. *Existing Conditions*

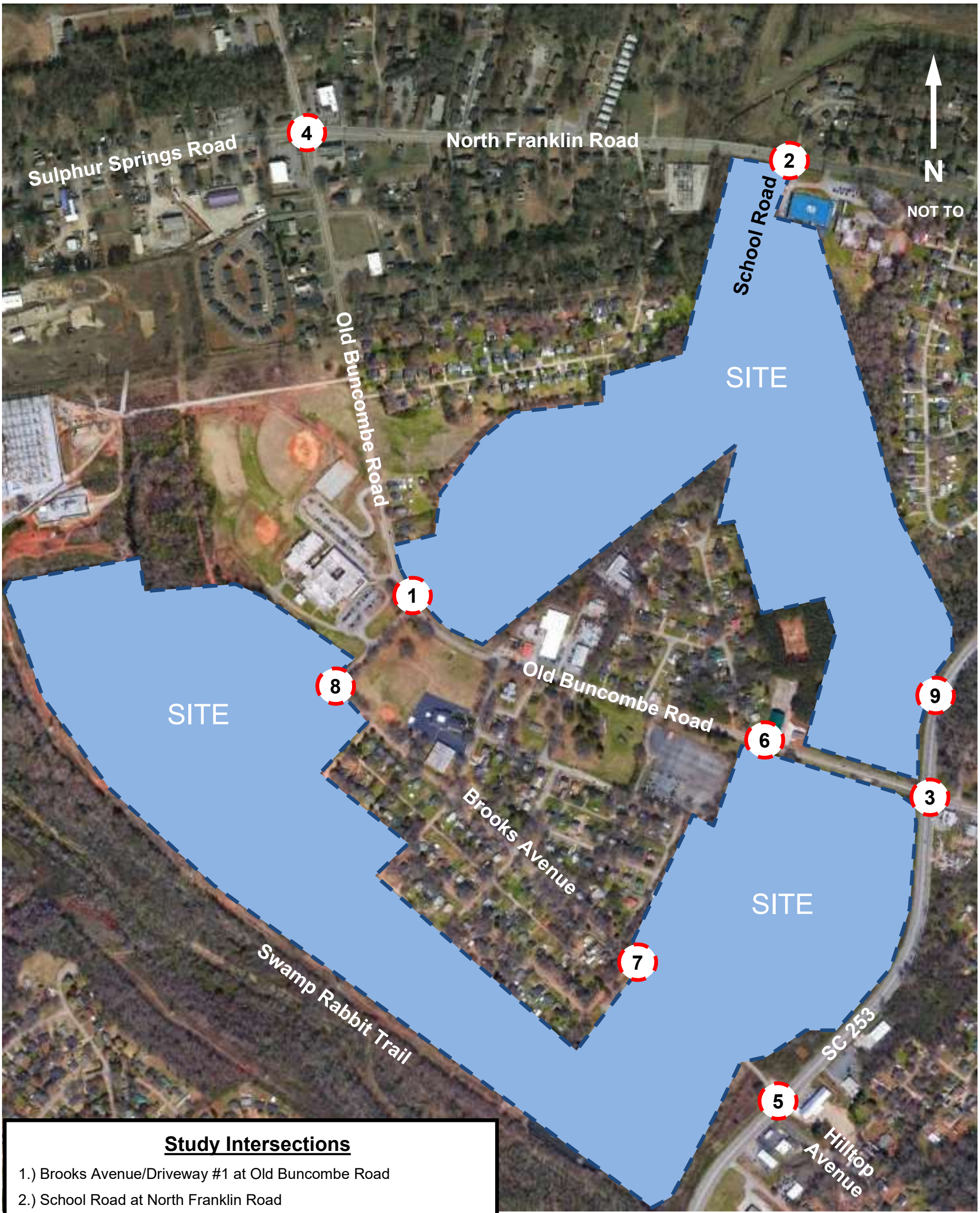
The proposed development site is located west of SC 253, is bounded by North Franklin Road (S-87) to the north and the Swamp Rabbit Trail to the south, and is split by Old Buncombe Road (S-13) and Brooks Avenue. The major roadways in the project vicinity are SC 253, Old Buncombe Road (S-13), and North Franklin Road (S-87).

SC 253 is a paved five-lane minor arterial with a posted speed limit of 45 mph in the vicinity of the study area. In 2019, SC 253 had an annual average daily traffic (AADT) of 14,000 vehicles per day (vpd) based on SCDOT Greenville County Count Station 249.

Old Buncombe Road (S-13) is a paved two-lane undivided minor arterial with a posted speed of 35 mph in the vicinity of the study area. In 2019, Old Buncombe Road (S-13) had an AADT of 7,100 vpd based on SCDOT Greenville County Count Station 497.

North Franklin Road (S-87) is a paved four-lane undivided major collector with a posted speed of 35 mph in the vicinity of the study area. In 2019, North Franklin Road (S-87) had an AADT of 10,800 vpd based on SCDOT Greenville County Count Station 397.

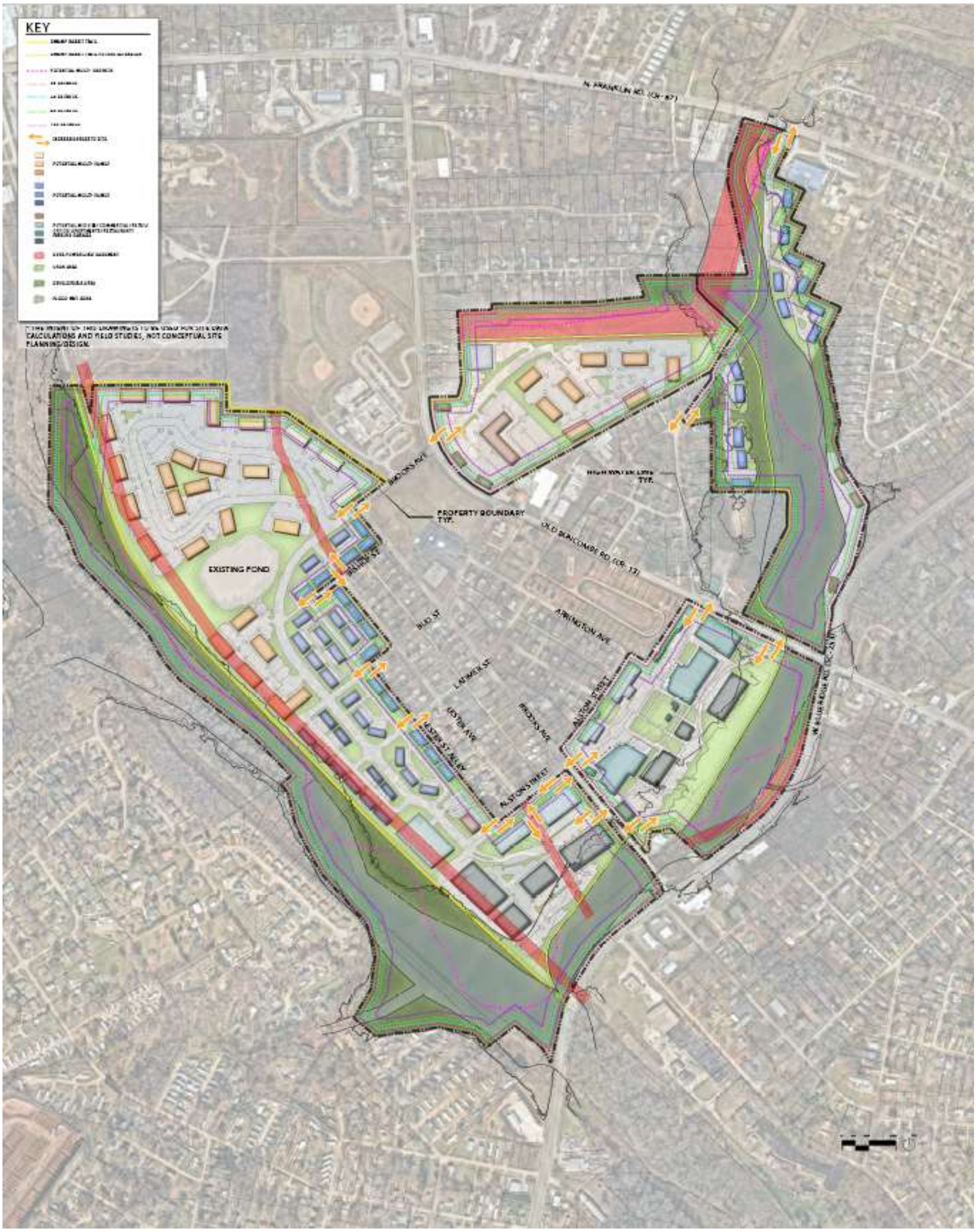
Figure 3 shows the existing laneage at the study area intersections.



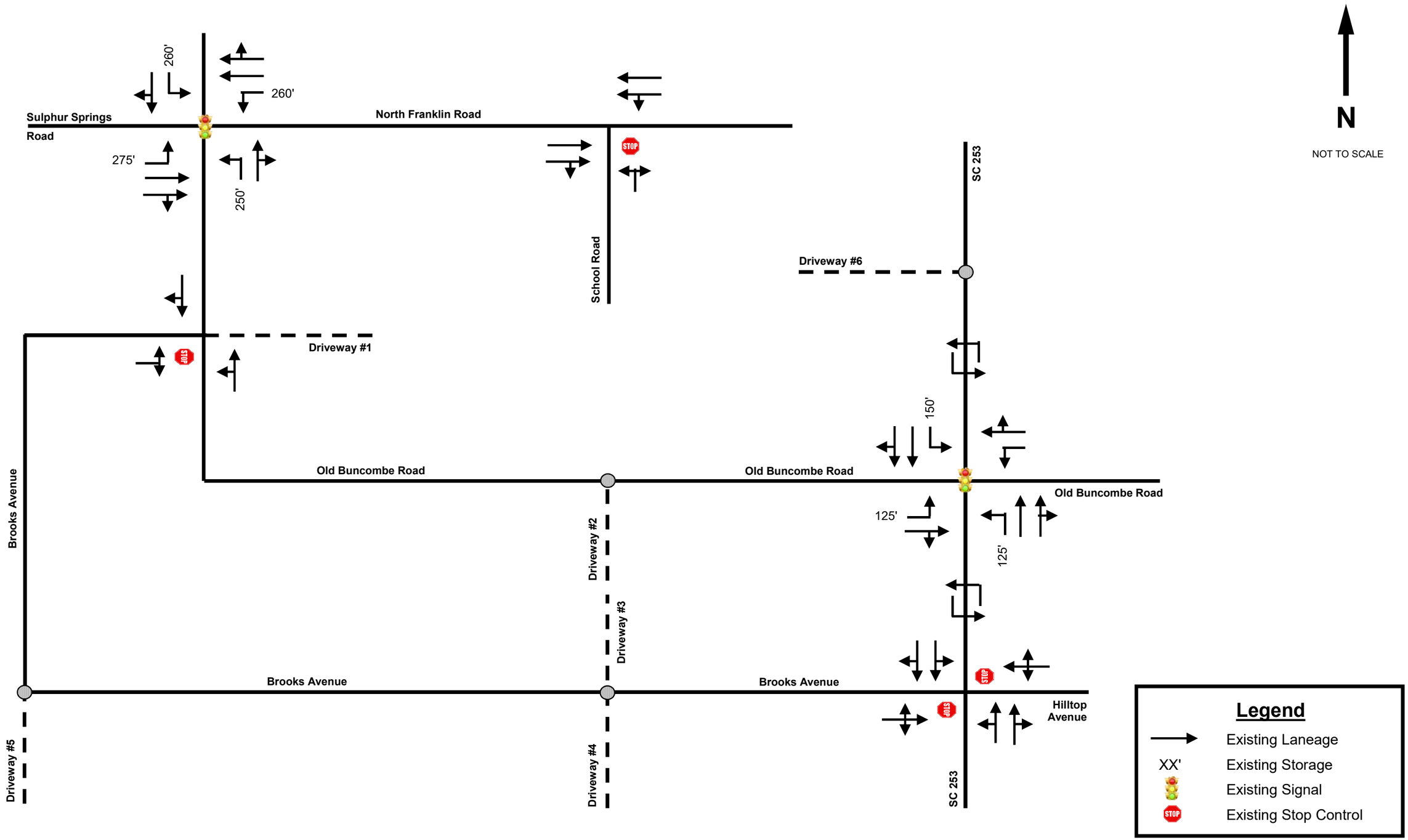
Study Intersections

1.) Brooks Avenue/Driveway #1 at Old Buncombe Road
2.) School Road at North Franklin Road
3.) Old Buncombe Road at SC 253
4.) Old Buncombe Road at Franklin Road/Sulphur Springs Road
5.) SC 253 at Brooks Avenue/Hilltop Avenue
6.) Driveway #2 at Old Buncombe Road
7.) Driveway #3/#4 at Brooks Avenue
8.) Driveway #5 at Brooks Avenue
9.) Driveway #6 at SC 253

Kimley»Horn	On The Trail Traffic Impact Analysis January 2021	Site Location and Study Area Map	Figure 1



Kimley»Horn	On The Trail Traffic Impact Analysis January 2021	Proposed Site Plan	Figure 2



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Existing Laneage

Figure 3

3. Trip Generation

The trip generation rates and equations published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* were used to estimate the trip generation potential for the mixed-use development. The following land uses were used in this analysis:

- ITE 151 – Mini Warehouse
- ITE 221 – Multifamily Housing (Mid-Rise)
- ITE 310 – Hotel
- ITE 710 – General Office Building
- ITE 820 – Shopping Center
- ITE 932 – High Turnover (Sit Down) Restaurant
- ITE 934 – Fast Food Restaurant with Drive Through

Using the above land use trip generation information, it was estimated that the gross trip generation potential for the proposed development is 5,663 trips during the AM peak hour of the adjacent street, and 7,581 trips during the PM peak hour of the adjacent street.

Due to the nature of the mixed-use development, internal capture and pass-by trip reductions were estimated based on methodologies in the ITE *Trip Generation Handbook, 3rd Edition*. Based on the reductions described, the following items should be noted:

- Internal capture reductions were limited to 20% for daily trips, 20% for AM peak hour trips, and 20% for PM peak hour trips
- Pass-by reductions were limited to 10% of the adjacent street traffic (SC 253 and Old Buncombe Road (S-13))

After internal capture and pass-by trip reductions, it is estimated that the proposed development will generate 4,324 total (3,108 enter/1,216 exit) net new external trips during the AM peak hour, and 5,825 total (2,052 enter/3,773 exit) net new external trips during the PM peak hour.

The ITE estimated trip generation for the master plan development is summarized in Table 1.

Table 1: Trip Generation Analysis Summary

Trip Generation									
Land Use	Intensity		Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
Mini-Warehouse (ITE 151)	112,500	SF	170	11	7	4	19	9	10
Multifamily Housing (Mid-Rise) (ITE 221)	1,660	DU	9,045	537	140	397	657	401	256
Hotel (ITE 310)	200	Rooms	1,831	95	56	39	124	63	61
General Office Building (ITE 710)	3,480,000	SF	33,195	3,298	2,836	462	3,318	531	2,787
Shopping Center (ITE 820)	872,200	SF	26,220	820	508	312	2,699	1,296	1,403
High-Turnover (Sit-Down) Restaurant (ITE 932)	18,000	SF	2,019	179	98	81	176	109	67
Fast-Food Restaurant with Drive-Through (ITE 934)	18,000	SF	8,477	723	369	354	588	306	282
Subtotal			**80,957**	**5,663**	**4,014**	**1,649**	**7,581**	**2,715**	**4,866**
Internal Capture			**15,787**	**1,131**	**802**	**329**	**1,516**	**543**	**973**
ITE Pass-By			*1,254*	*276*	*138*	*138*	*978*	*489*	*489*
Adjacent Street Traffic				*2,062*			*2,397*		
10% Adjacent Street Traffic			*448*	*208*	*104*	*104*	*240*	*120*	*120*
Pass-By			**448**	**208**	**104**	**104**	**240**	**120**	**120**
Net New External Trips			**64,722**	**4,324**	**3,108**	**1,216**	**5,825**	**2,052**	**3,773**

Note: Trip generation was calculated using the following data:

Daily Traffic Generation

Mini-Warehouse (ITE 151)	[ITE 151]	=	T = 1.51 X; (50% in, 50% out)
Multifamily Housing (Mid-Rise) (ITE 221)	[ITE 221]	=	T = 5.45 X - 1.75; (50% in, 50% out)
Hotel (ITE 310)	[ITE 310]	=	T = 11.29 X - 426.97; (50% in, 50% out)
General Office Building (ITE 710)	[ITE 710]	=	Ln (T) = 0.97 Ln (X) + 2.50; (50% in, 50% out)
Shopping Center (ITE 820)	[ITE 820]	=	Ln (T) = 0.68 Ln (X) + 5.57; (50% in, 50% out)
High-Turnover (Sit-Down) Restaurant (ITE 932)	[ITE 932]	=	T = 112.18 X; (50% in, 50% out)
Fast-Food Restaurant with Drive-Through (ITE 934)	[ITE 934]	=	T = 470.95 X; (50% in, 50% out)

AM Peak-Hour Traffic Generation

Mini-Warehouse (ITE 151)	[ITE 151]	=	T = 0.10 X; (60% in, 40% out)
Multifamily Housing (Mid-Rise) (ITE 221)	[ITE 221]	=	Ln (T) = 0.98 Ln (X) - 0.98; (26% in, 74% out)
Hotel (ITE 310)	[ITE 310]	=	T = 0.50 X - 5.34; (59% in, 41% out)
General Office Building (ITE 710)	[ITE 710]	=	T = 0.94 X + 26.49; (86% in, 14% out)
Shopping Center (ITE 820)	[ITE 820]	=	T = 0.94 X ; (62% in, 38% out)
High-Turnover (Sit-Down) Restaurant (ITE 932)	[ITE 932]	=	T = 9.94 X; (55% in, 45% out)
Fast-Food Restaurant with Drive-Through (ITE 934)	[ITE 934]	=	T = 40.19 X; (51% in, 49% out)

PM Peak-Hour Traffic Generation

Mini-Warehouse (ITE 151)	[ITE 151]	=	T = 0.17 X; (47% in, 53% out)
Multifamily Housing (Mid-Rise) (ITE 221)	[ITE 221]	=	Ln (T) = 0.96 Ln (X) - 0.63; (61% in, 39% out)
Hotel (ITE 310)	[ITE 310]	=	T = 0.75 X - 26.02; (51% in, 49% out)
General Office Building (ITE 710)	[ITE 710]	=	Ln (T) = 0.95 Ln (X) + 0.36; (16% in, 84% out)
Shopping Center (ITE 820)	[ITE 820]	=	Ln (T) = 0.74 Ln (X) + 2.89; (48% in, 52% out)
High-Turnover (Sit-Down) Restaurant (ITE 932)	[ITE 932]	=	T = 9.77 X; (62% in, 38% out)
Fast-Food Restaurant with Drive-Through (ITE 934)	[ITE 934]	=	T = 32.67 X; (52% in, 48% out)

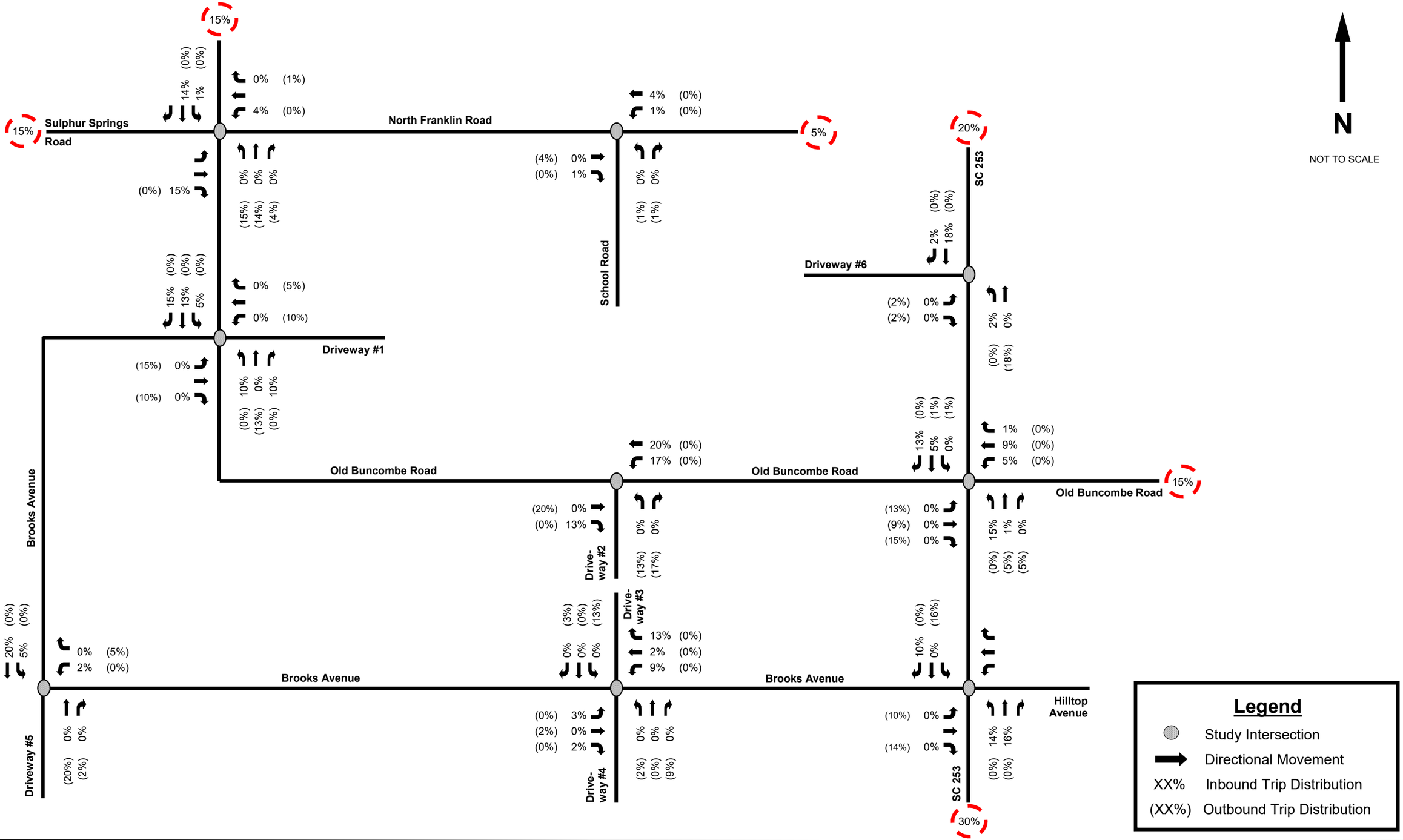
4. Site Traffic Distribution

The proposed development's trips were assigned to the surrounding roadway network based on existing peak-hour turning movements, master plan development, and professional judgement, and local knowledge.

The trip distribution percentages used in this analysis are as follows:

- 30% to/from the South via SC 253
- 20% to/from the North via SC 253
- 15% to/from the East via Old Buncombe Road (S-13)
- 15% to/from the North via Old Buncombe Road (S-13)
- 15% to/from the West via Sulphur Springs Road (S-87)
- 5% to/from the East via North Franklin Road (S-87)

The site trip distribution is shown in Figure 4.



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Site Trip Distribution

Figure 4

5. Traffic Volumes

5.1. *2021 Existing Traffic*

Peak hour intersection turning movement counts were collected for the study area intersections during the 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM time periods on Tuesday, November 17, 2021 by National Data and Surveying Services, Inc. The Greenville County Schools academic calendar indicates that elementary and middle schools were in attendance for five (5) days per week and high schools were in attendance for two (2) days per week during the week of data collection.

Due to the ongoing COVID-19 pandemic, volumes were increased by 12% in accordance with the SCDOT "Revised Guidance for Conducting Traffic Impact Studies during COVID19" memorandum dated July 29, 2021.

It should be noted that since these counts were collected during the last half of the 4th quarter of the year 2021, the analysis existing year was assumed to be year 2021.

Figure 5 shows the year 2021 existing AM/PM peak-hour traffic volumes. The raw turning-movement count data and intersection volume development worksheets are included in the Appendix.

5.2. *2035 No Build Traffic*

The anticipated build-out for the development and analysis year is year 2035. The 2035 No Build traffic volumes include existing and historical growth traffic as described in the following section.

Historical Growth Traffic

Historical growth traffic is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area. For this analysis, ten (10) years of SCDOT historical traffic volumes were reviewed and it was determined that the historical traffic growth in the area is approximately 1.0% annually. Therefore, an annual growth rate of 1.0% percent was applied to the estimated year 2021 traffic volumes to calculate 2035 No Build traffic volumes.

Committed Improvements

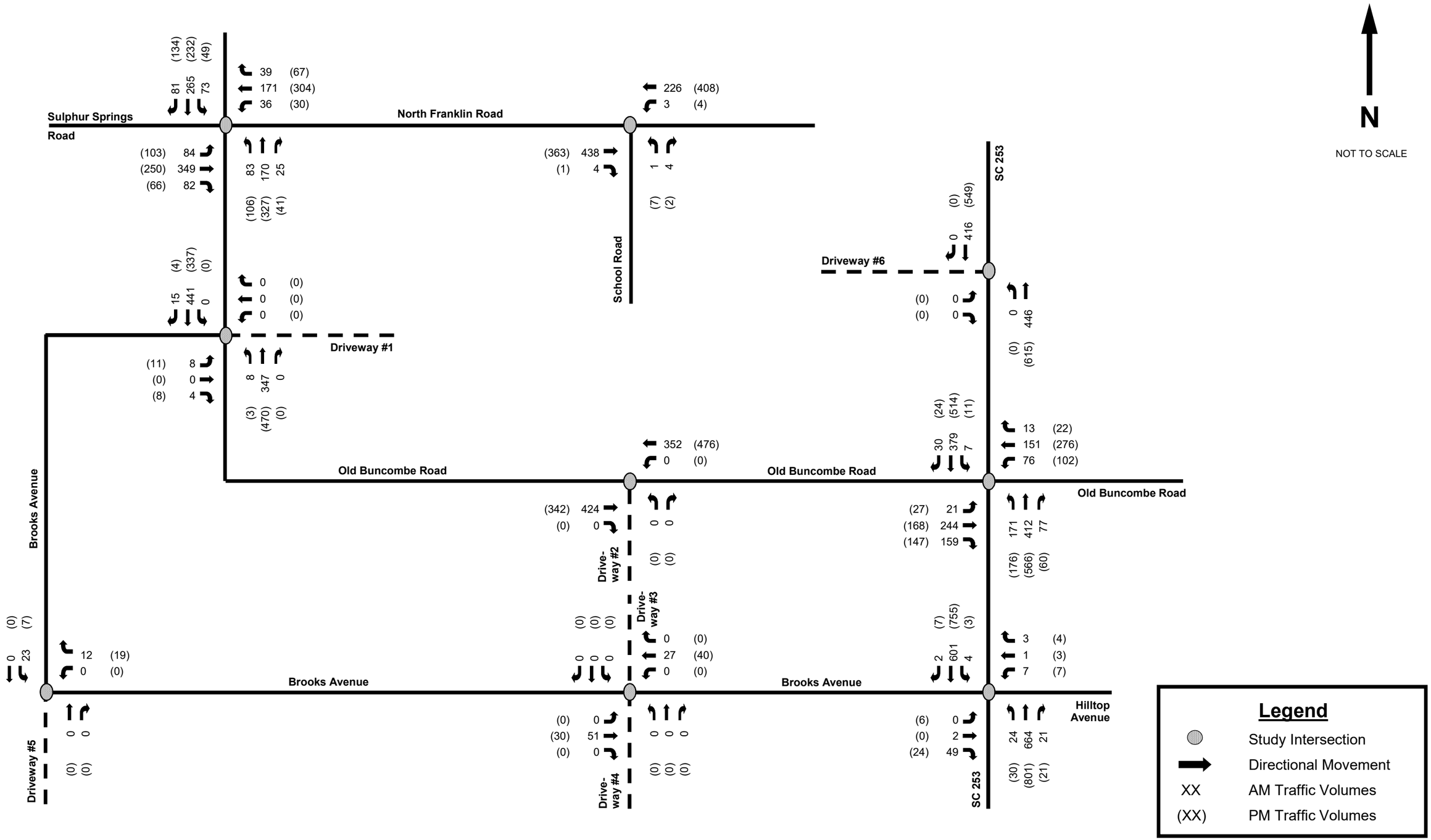
According to the Greenville-Pickens Area Transportation Study (GPATS) 2040 Long Range Transportation Plan (LRTP), Old Buncombe Road (S-13), east of SC 253 has been identified for a road diet in the future. Although this recommended improvement does impact the roadway network studied as a part of this analysis, this recommendation should be considered as the proposed development is constructed and capacity improvements are needed to accommodate site traffic.

The 2035 No Build AM and PM peak-hour traffic volumes are shown in Figure 6.

5.3. *2035 Build-Out Traffic*

Based on the trip generation from Table 1 and the anticipated trip distribution as described in Section 4, the net new external project trips were assigned to the study network as shown in Figure 7. As described in Section 3, pass-by reductions were estimated based on methodologies in the ITE *Trip Generation Handbook, 3rd Edition*. Additionally, due to the location of the intersections of Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13) and Driveway #3/#4 at Brooks Avenue in relation to the site, project trips that would be considered as internal capture were estimated traveling to/from Brooks Avenue and Driveway #1 and to/from Driveways #3 and #4. These volumes are shown in Figure 8 and Figure 9, respectively.

The 2035 Build-Out traffic volumes include the 2035 No Build traffic volumes and the proposed site traffic, which includes the net new external project trips, pass-by trips, and internal capture project trips, and are shown in Figure 10.



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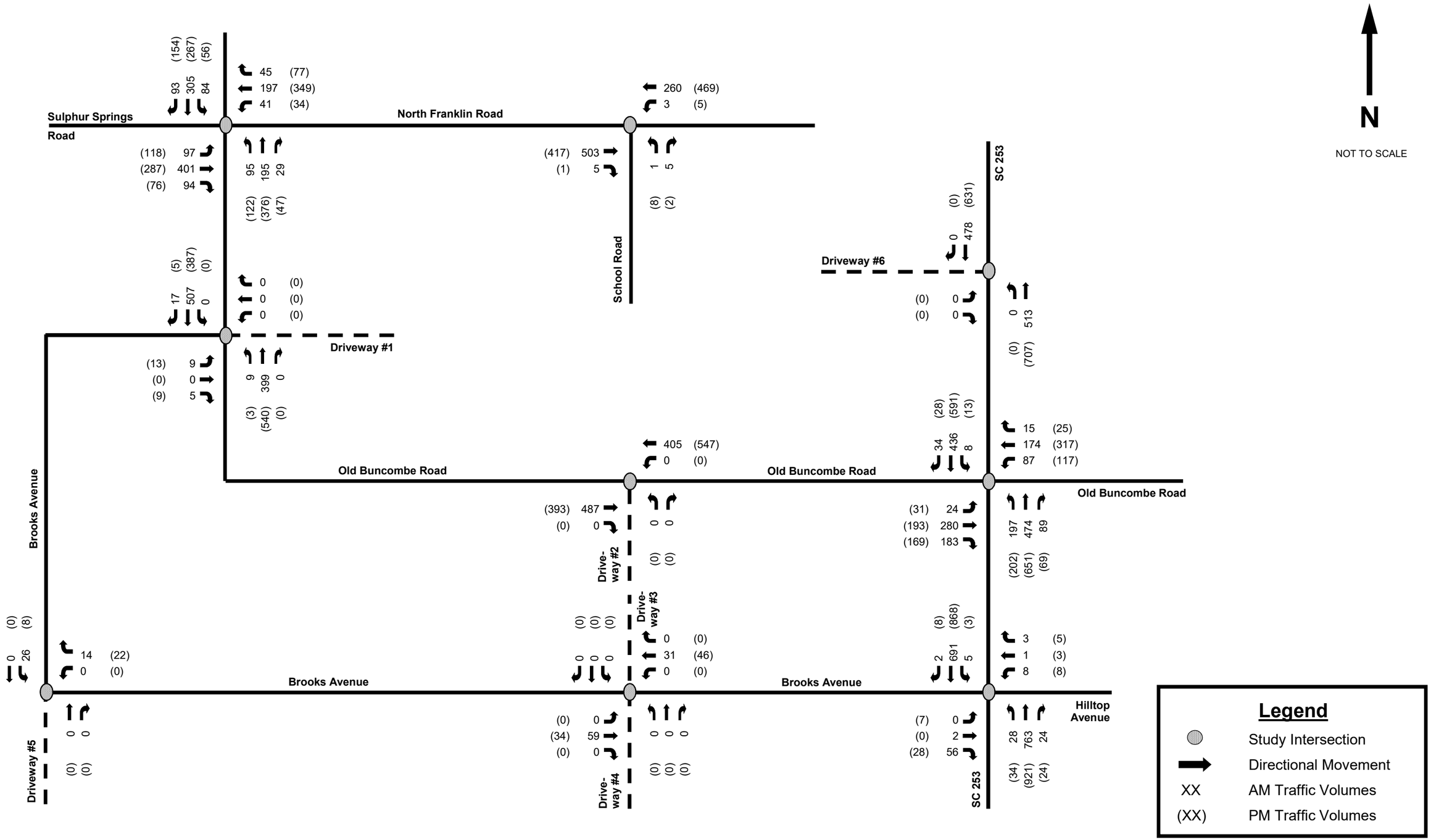
2021 Existing AM/PM
Peak Hour Traffic Volumes

Figure 5



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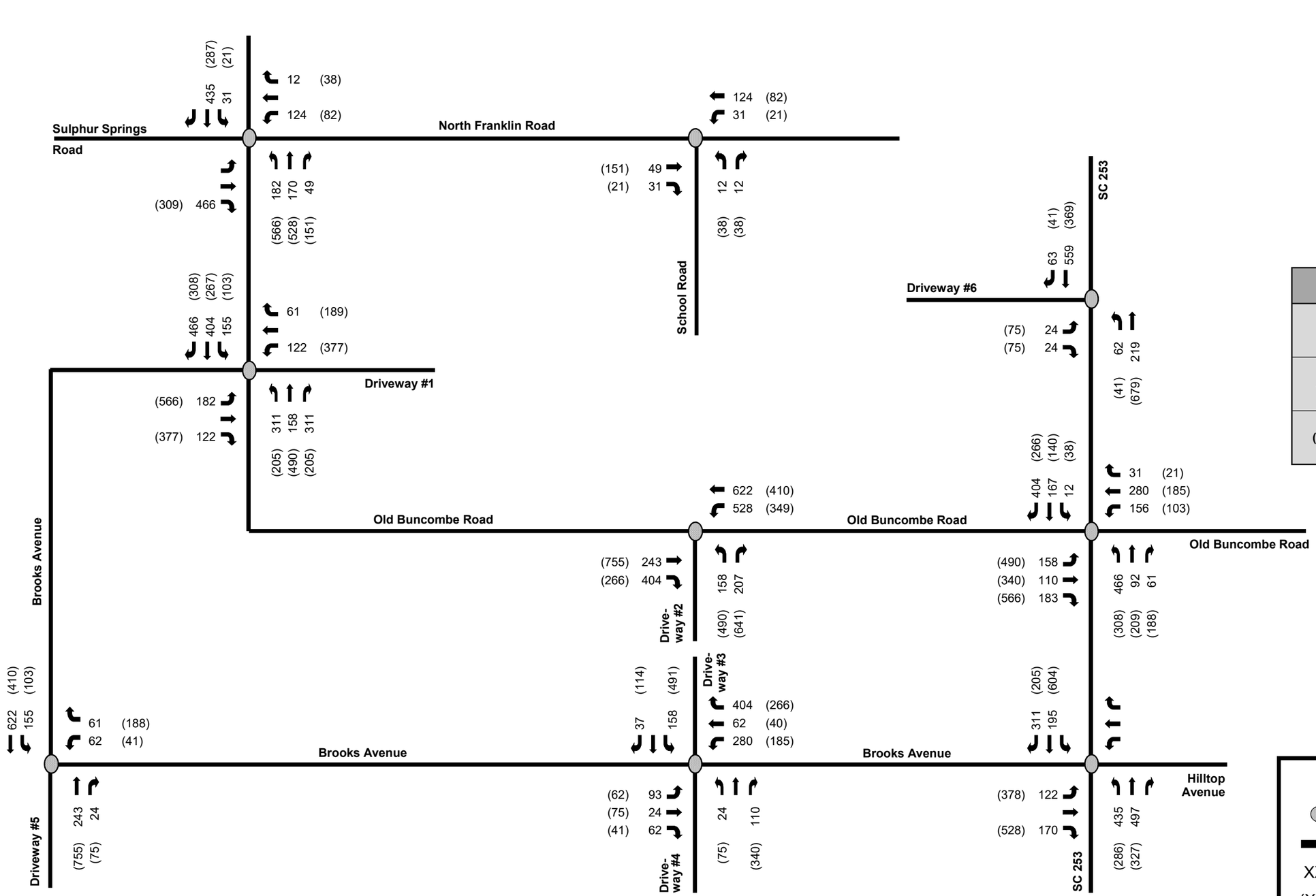
2035 No Build AM/PM
Peak Hour Traffic Volumes

Figure 6



Net New External Trip Generation			
	Enter	Exit	Total
AM	3,108	1,216	4324
(PM)	2,052	3,773	5825

Legend

- Study Intersection
- Directional Movement
- XX AM Project Trips
- (XX) PM Project Trips

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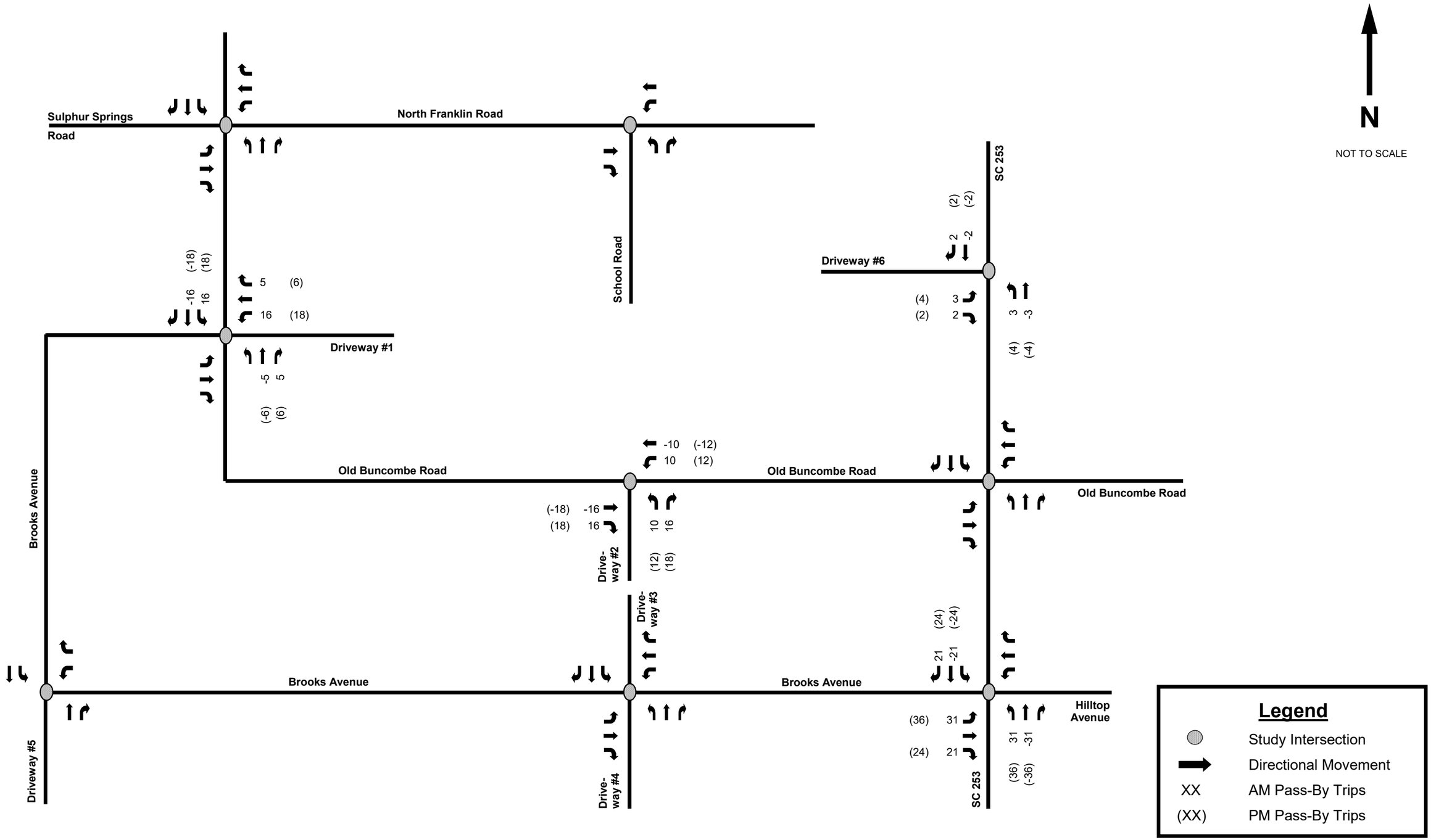
Net New External Project Trips

Figure 7

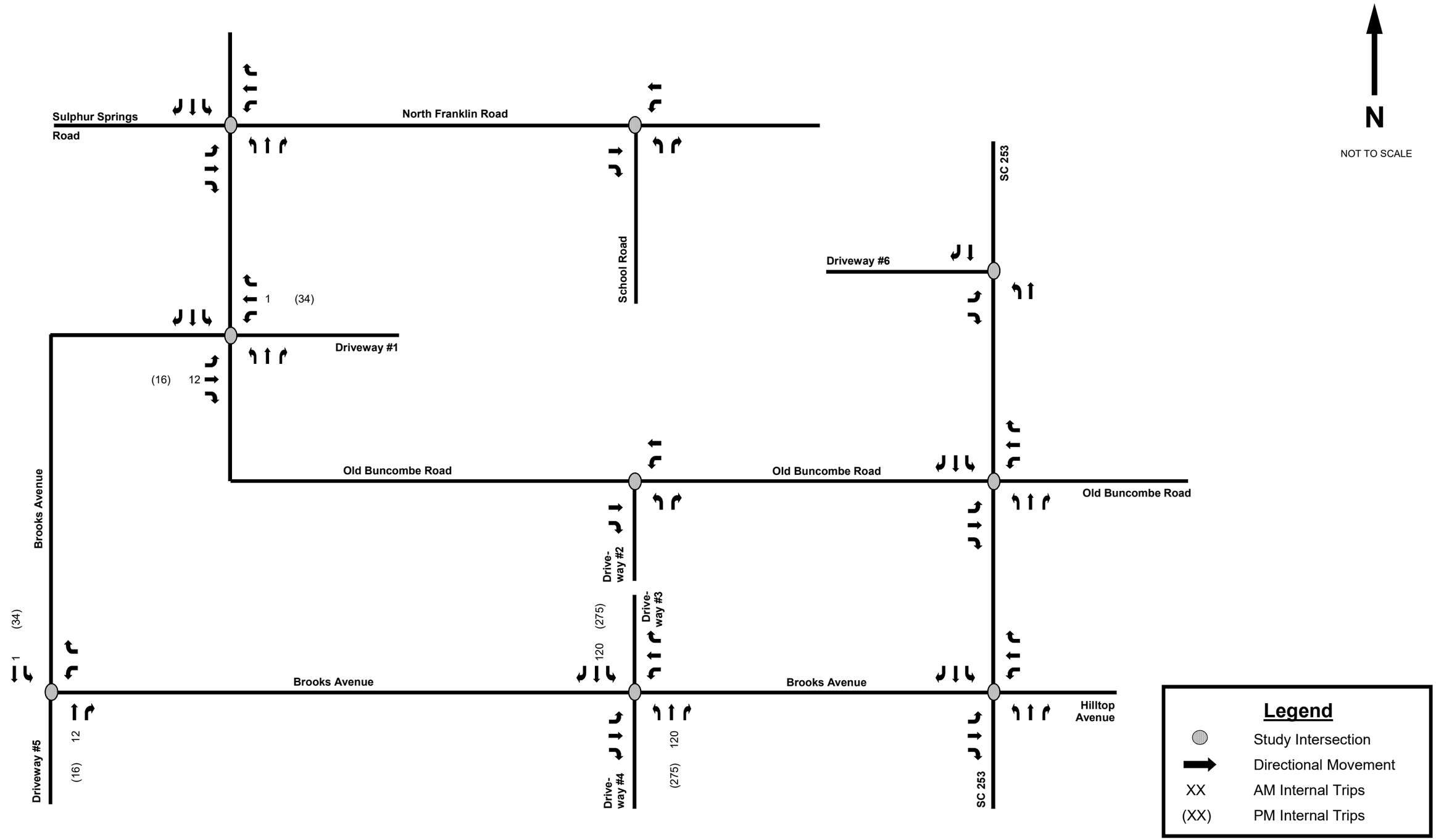


Kimley»Horn

On The Trail
Traffic Impact Analysis
January 2021

Pass-By Project Trips

Figure 8

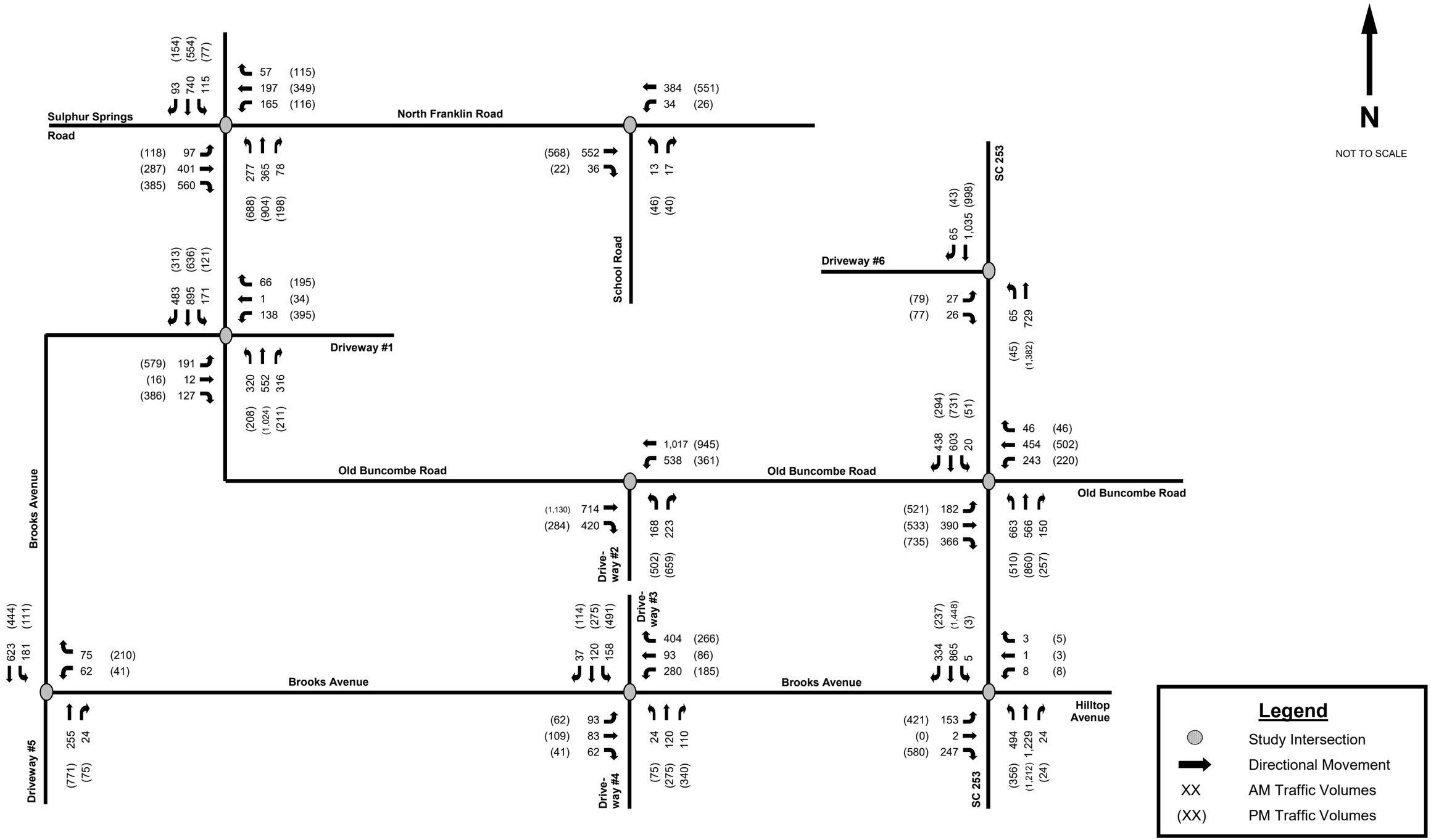


Kimley»Horn

On The Trail
Traffic Impact Analysis
January 2021

Internal Project Trips

Figure 9



Kimley»Horn

On The Trail
Traffic Impact Analysis
January 2021

2035 Build AM/PM
Peak Hour Traffic Volumes

Figure 10

6. Capacity Analysis

Level-of-Service (LOS) determinations were made for the weekday AM and PM peak hours for the study network intersection using Synchro Version 10. The program uses methodologies contained in the 2000, 2010, and 6th editions of the *Highway Capacity Manual (HCM)*, to determine the operating characteristics of an intersection. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment, or through a particular intersection, within a specified period of time under prevailing roadway, traffic, and control conditions.

LOS is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions of a traffic stream. The HCM defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for unsignalized intersections, with stop control on the minor street(s) only, are reported for the side street approaches. Low levels-of-service for the side street approaches are not uncommon, as vehicles may experience long delays turning onto a major roadway.

Levels-of-service for signalized intersections are reported for the intersection as a whole and are based on the average approach delay for the intersection. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

Capacity analyses were performed for the following conditions:

- 2021 Existing conditions
- 2035 No Build conditions
- 2035 Build-Out conditions
- 2035 Build-Out Improved conditions

Table 2 lists the LOS approach delay thresholds published in the HCM for signalized intersections. Synchro Version 10 software uses the same LOS thresholds as those published in HCM 6.

Table 2: Signalized Level of Service Delay Thresholds

Level-of-Service Control Delay Thresholds for Signalized Intersections (HCM 6th Edition)	
Level-of-Service	**Control Delay per**
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Table 3 lists the LOS approach delay thresholds published in the HCM 6 for unsignalized intersections, as well as the unsignalized operational descriptions assumed herein.

Table 3: Unsignalized Level of Service Delay Thresholds

Level-of-Service Control Delay Thresholds for Unsignalized Intersections (HCM 6th Edition)		
Level-of-Service	**Average Control Delay per Vehicle [sec/veh]**	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

Capacity analysis reports generated by Synchro Version 10 software are included in the Appendix and are briefly summarized in the following subsections.

SimTraffic was utilized to estimate 95th percentile queues for the study area intersections. SimTraffic results reports are included in the Appendix.

6.1. *Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13)*

Table 4 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13) under all analysis scenarios.

It should be noted that due to the anticipated road geometry under 2035 Build-Out Improved conditions, HCM 2000 results were provided as opposed to HCM 6. This is due to the inability of HCM 6 to analyze turning movements with shared and exclusive lanes (i.e. a single left-turn lane and a shared through/left lane on the same approach). To provide an appropriate delay comparison to 2021 Existing conditions, 2035 No Build conditions, and 2035 Build-Out conditions, HCM 2000 results were provided for all analyzed scenarios. HCM 2000 uses the same LOS thresholds as those published in HCM 6, shown in Table 2 and Table 3 in the previous section.

Table 4: Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13)

Brooks Avenue/Driveway #1 at Old Buncombe Road						
Condition	Measure	EB (Brooks Avenue)	WB (Driveway #1)	NB (Old Buncombe Road)	SB (Old Buncombe Road)	Intersection
AM Peak Hour						
Existing	LOS (Delay)	C (21.0)	-	-	-	-
2035 No Build	LOS (Delay)	C (18.8)	-	-	-	-
2035 Build-Out	LOS (Delay)	F (Err)	F (Err)	-	-	-
2035 Build-Out Improved	LOS (Delay)	C (34.4)	D (39.3)	C (22.4)	C (30.8)	C (28.7)
PM Peak Hour						
Existing	LOS (Delay)	C (18.4)	-	-	-	-
2035 No Build	LOS (Delay)	C (16.8)	-	-	-	-
2035 Build-Out	LOS (Delay)	F (Err)	F (Err)	-	-	-
2035 Build-Out Improved	LOS (Delay)	E (56.1)	E (59.4)	D (44.6)	C (31.5)	D (46.2)
Note: HCM 2000 results provided for all analysis scenarios						

Intersection Summary

As shown in Table 4, HCM 2000 was unable to calculate delay results for the proposed site driveway and Brooks Avenue under 2035 Build-Out conditions as designated by "F (Err)". Therefore, it can be reasonably concluded that during both peak hours under 2035 Build-Out conditions, the proposed site driveway and Brooks Avenue are anticipated to experience long delays. To mitigate these impacts, a traffic signal was modeled under 2035 Build-Out Improved conditions, with the necessary road geometry and signal operations, to determine if a traffic signal warrant analysis would be necessary. As shown in the table above, the

introduction of a traffic signal at this intersection reduced the delay present under 2035 Build-Out conditions.

Traffic Signal Warrant Analysis

Based on the analysis conducted above, a traffic signal warrant analysis was conducted at this intersection based on the 2009 Manual on Uniform Traffic Control Devices (MUTCD) requirements to determine if a traffic signal would warrant based on the anticipated traffic growth and proposed development traffic. The analysis conducted addresses only "Warrant 3, Peak Hour" from the MUTCD for the 2035 Build-Out conditions based on the available data at the time of this study, and with the understanding that further study would be required as the proposed development in constructed.

To provide the most conservative approach, the traffic signal warrant conducted considered the following:

- The number of approach lanes will be set at (2) two for the major street and minor street
- The traffic signal warrant will exclude 50% of the minor street right-turning traffic

Based on these considerations, it was determined that the 2035 Build-Out traffic volumes satisfy "Warrant 3, Peak Hour" and that further analysis should be performed as the development builds out to evaluate the need for a traffic signal. The traffic signal warrant calculations and analyses are attached in the Appendix.

Necessary Improvements

The following improvements are likely to be needed to mitigate impacts of the full buildout of the development at this intersection:

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 300-ft
    - Convert the existing shared left/right lane to a shared through/left lane
    - Right-turn lane with a storage length of 325-ft
- Construct the following along the westbound approach (Driveway #1):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/left lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the northbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 150-ft

- Construct the following along the southbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 350-ft

6.2. *School Road at North Franklin Road (S-87)*

Table 5 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of School Road at North Franklin Road (S-87) under all analysis scenarios.

Table 5: School Road at North Franklin Road (S-87)

School Road at North Franklin Road		
Condition	Measure	NB (School Road)
AM Peak Hour		
Existing	LOS (Delay)	B (11.3)
2035 No Build	LOS (Delay)	B (10.9)
2035 Build-Out	LOS (Delay)	C (15.0)
2035 Build-Out Improved	LOS (Delay)	C (15.0)
PM Peak Hour		
Existing	LOS (Delay)	B (14.7)
2035 No Build	LOS (Delay)	B (14.4)
2035 Build-Out	LOS (Delay)	C (20.6)
2035 Build-Out Improved	LOS (Delay)	C (20.6)

Intersection Summary

As shown in Table 5, the intersection of School Road at North Franklin Road (S-87) is not anticipated to have any significant or adverse impacts as a result of the proposed development. Although this intersection is anticipated to require no capacity improvements, as the proposed development is constructed, this intersection will require additional study to ensure adequate intersection operations.

6.3. *Old Buncombe Road (S-13) at SC 253*

Table 6 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Old Buncombe Road (S-13) at SC 253 under all analysis scenarios.

Table 6: Old Buncombe Road (S-13) at SC 253

Old Buncombe Road at SC 253						
Condition	Measure	EB (Old Buncombe Road)	WB (Old Buncombe Road)	NB (SC 253)	SB (SC 253)	Intersection
AM Peak Hour						
Existing	LOS (Delay)	D (48.1)	C (22.0)	C (22.2)	C (28.4)	C (30.0)
2035 No Build	LOS (Delay)	D (47.6)	C (21.9)	C (22.0)	C (28.2)	C (29.7)
2035 Build-Out	LOS (Delay)	F (318.5)	F (150.6)	F (168.1)	F (271.1)	F (225.7)
2035 Build-Out Improved	LOS (Delay)	D (41.0)	D (47.5)	C (33.6)	D (47.2)	D (41.3)
PM Peak Hour						
Existing	LOS (Delay)	D (45.8)	C (29.9)	C (21.2)	C (27.2)	C (28.4)
2035 No Build	LOS (Delay)	D (45.4)	C (29.6)	C (20.9)	C (27.0)	C (28.2)
2035 Build-Out	LOS (Delay)	F (476.4)	F (143.6)	F (166.2)	F (311.5)	F (298.1)
2035 Build-Out Improved	LOS (Delay)	D (43.6)	F (85.3)	D (36.1)	D (41.3)	D (46.9)

Intersection Summary

As shown in Table 6, the full buildout project traffic is anticipated to increase delay at the intersection of Old Buncombe Road (S-13) at SC 253.

Necessary Improvements

The following improvements are likely to be needed to mitigate impacts of the full buildout of the development at this intersection:

- Construct the following along the eastbound approach (Old Buncombe Road):
  - Dual left-turn lanes with storage lengths of 250-ft
  - Additional through lane
  - Dual right-turn lanes with storage lengths of 300-ft
- Construct the following along the westbound approach (Old Buncombe Road):
  - Convert the existing left-turn lane to an additional through lane and construct a left-turn lane with a storage length of 250-ft
- Construct the following along the northbound approach (SC 253):
  - Dual left-turn lanes with storage lengths of 500-ft
- Construct the following along the southbound approach (SC 253):
  - Right-turn lane with a storage length of 350-ft

With the above improvements, the intersection is anticipated to operate at LOS D during both peak hours under the 2035 Build-Out Improved conditions.

It should be noted that during the PM peak hour under these conditions, the westbound approach is anticipated to operate at LOS F. This is most likely due to the northbound and eastbound dual left-turning movements requiring a longer green time to operate with minimal queuing, which impacts the amount of green time allocated to the remaining approaches. Furthermore, no excessive queuing was observed along the westbound approach in the SimTraffic queuing analysis, the results of which are included in the Appendix.

6.4. *Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87)*

Table 7 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Old Buncombe Road (S-13) at North Franklin Road (S-87)/Sulphur Springs Road under all analysis scenarios.

Table 7: Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87)

Old Buncombe Road at Franklin Road/Sulphur Springs Road						
Condition	Measure	EB (Sulphur Springs Road)	WB (Franklin Road)	NB (Old Buncombe Road)	SB (Old Buncombe Road)	Intersection
AM Peak Hour						
Existing	LOS (Delay)	B (14.1)	B (19.5)	B (13.3)	C (25.0)	B (18.0)
2035 No Build	LOS (Delay)	B (14.2)	B (19.7)	B (13.4)	C (25.4)	B (18.2)
2035 Build-Out	LOS (Delay)	D (39.2)	F (228.5)	F (111.7)	F (254.1)	F (145.7)
2035 Build-Out Improved	LOS (Delay)	E (75.5)	C (25.5)	C (23.2)	D (35.9)	D (44.9)
PM Peak Hour						
Existing	LOS (Delay)	B (15.2)	C (24.0)	B (14.9)	C (30.8)	C (21.0)
2035 No Build	LOS (Delay)	B (15.3)	C (24.3)	B (14.9)	C (31.2)	C (21.2)
2035 Build-Out	LOS (Delay)	E (55.1)	F (113.3)	F (158.4)	F (218.9)	F (143.1)
2035 Build-Out Improved	LOS (Delay)	C (29.7)	D (39.9)	C (29.2)	D (46.7)	C (34.4)

Intersection Summary

As shown in Table 7, the full buildout project traffic is anticipated to increase delay at the intersection of Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87).

Necessary Improvements

The following improvements are likely to be needed to mitigate impacts of the full buildout of the development at this intersection:

- Construct the following along the eastbound approach (Sulphur Springs Road):
  - Right-turn lane with a storage length of 350-ft
- Construct the following along the westbound approach (North Franklin Road):
  - Modify the existing left-turn signal operation from permitted only to permitted+protected
- Construct the following along the northbound approach (Old Buncombe Road):
  - Dual left-turn lanes with storage lengths of 350-ft
  - Additional through lane

- Construct the following along the southbound approach (Old Buncombe Road):
    - Additional through lane

With the above improvements, the intersection is anticipated to operate at LOS C or better during both peak hours under the 2035 Build-Out Improved conditions.

It should be noted that during the AM peak hour under these conditions, the eastbound approach is anticipated to operate at a LOS E, which is most likely due to the heavy eastbound right-turning movement. Furthermore, no excessive queuing was observed along the eastbound approach in the SimTraffic queuing analysis, the results of which are included in the Appendix.

6.5. *SC 253 at Brooks Avenue/Hilltop Avenue*

Table 8 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of SC 253 at Brooks Avenue/Hilltop Avenue under all analysis scenarios.

Table 8: SC 253 at Brooks Avenue/Hilltop Avenue

SC 253 at Brooks Avenue/Hilltop Avenue						
Condition	Measure	EB (Brooks Avenue)	WB (Hilltop Avenue)	NB (SC 253)	SB (SC 253)	Intersection
AM Peak Hour						
Existing	LOS (Delay)	B (13.4)	E (41.2)	-	-	-
2035 No Build	LOS (Delay)	B (13.4)	E (44.6)	-	-	-
2035 Build-Out	LOS (Delay)	F (Err)	F (Err)	-	-	-
2035 Build-Out Improved	LOS (Delay)	C (30.5)	D (44.3)	C (20.8)	C (26.8)	C (24.2)
PM Peak Hour						
Existing	LOS (Delay)	D (25.0)	F (65.0)	-	-	-
2035 No Build	LOS (Delay)	D (26.0)	F (67.3)	-	-	-
2035 Build-Out	LOS (Delay)	F (Err)	F (Err)	-	-	-
2035 Build-Out Improved	LOS (Delay)	F (90.4)	D (51.9)	C (25.4)	D (50.5)	D (50.5)

Intersection Summary

As shown in Table 8, HCM 6 was unable to calculate delay results for the eastbound and westbound approaches under 2035 Build-Out conditions as designated by "F (Err)". Therefore, it can be reasonably concluded that during both peak hours under 2035 Build-Out conditions, the eastbound and westbound approaches are anticipated to experience long delays. To mitigate these impacts, a traffic signal was modeled under 2035 Build-Out Improved conditions, with the necessary road geometry and signal operations, to determine if a traffic signal warrant analysis would be necessary. As shown in the table above, the introduction of a traffic signal at this intersection reduced the delay present under 2035 Build-Out conditions.

It should be noted that during the PM peak hour under 2035 Build-Out Improved conditions, the eastbound approach operates at a LOS F. However, based on observations made in SimTraffic, it was determined that the road geometry modeled under these conditions should provide adequate capacity for the anticipated volume. As the proposed development is constructed, this approach will require further study to determine if additional capacity improvements are necessary to provide adequate intersection operations.

Traffic Signal Warrant Analysis

Based on the analysis conducted above, a traffic signal warrant analysis was conducted at this intersection based on "Warrant 3, Peak Hour" within the MUTCD for the 2035 Build-Out conditions under the same conditions utilized in Section 6.1.

It was determined that the 2035 Build-Out traffic volumes satisfy "Warrant 3, Peak Hour" and that further analysis should be performed as the development builds out to evaluate the need for a traffic signal. The traffic signal warrant calculations and analyses are attached in the Appendix.

Necessary Improvements

The following improvements are likely to be needed to mitigate impacts of the full buildout of the development at this intersection:

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Right-turn lane
- Construct the following along the northbound approach (SC 253):
    - Dual left-turn lanes with storage lengths of 250-ft
- Construct the following along the southbound approach (SC 253):
    - Left-turn lane with a storage length of 150-ft
    - Right-turn lane with a storage length of 300-ft

6.6. *Driveway #2 at Old Buncombe Road (S-13)*

Table 9 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Driveway #2 at Old Buncombe Road (S-13) under 2035 Build-Out conditions and 2035 Build-Out Improved conditions.

Table 9: Driveway #2 at Old Buncombe Road (S-13)

Driveway #2 at Old Buncombe Road					
Condition	Measure	EB (Old Buncombe Road)	WB (Old Buncombe Road)	NB (Driveway #2)	Intersection
AM Peak Hour					
2035 Build-Out	LOS (Delay)	-	-	F (285.9)	-
2035 Build-Out Improved	LOS (Delay)	C (21.0)	B (15.5)	C (33.2)	B (19.8)
PM Peak Hour					
2035 Build-Out	LOS (Delay)	-	-	F (3035.5)	-
2035 Build-Out Improved	LOS (Delay)	C (33.3)	C (23.1)	D (45.7)	C (33.6)

Intersection Summary

As shown in Table 9, it is anticipated that the proposed site driveway will experience long delays during both peak hours under 2035 Build-Out conditions due to the anticipated site traffic. To mitigate these impacts, a traffic signal was modeled under 2035 Build-Out Improved conditions, with the necessary road geometry and signal operations, to determine if a traffic signal warrant analysis would be necessary. As shown in the table above, the introduction of a traffic signal at this intersection reduced the impacts present under 2035 Build-Out conditions.

Traffic Signal Warrant Analysis

Based on the analysis conducted above, a traffic signal warrant analysis was conducted at this intersection based on "Warrant 3, Peak Hour" within the MUTCD for the 2035 Build-Out conditions under the same conditions utilized in Section 6.1.

It was determined that the 2035 Build-Out traffic volumes satisfy "Warrant 3, Peak Hour" and that further analysis should be performed as the development builds out to evaluate the need for a traffic signal. The traffic signal warrant calculations and analyses are attached in the Appendix.

Necessary Improvements

To accommodate site traffic accessing the proposed development, the following is improvements are likely to be needed at the site driveway:

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications

- Construct the following along the eastbound approach (Old Buncombe Road):
    - Additional through lane
- Construct the following along the westbound approach (Old Buncombe Road):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Additional through lane
- Construct the following along the northbound approach (Driveway #2):
    - Dual left-turn lanes with a 250-ft storage length and an egress lane
    - Dual right-turn lanes with a 350-ft storage length and an egress lane
    - Two ingress lanes

6.7. *Driveway #3/#4 at Brooks Avenue*

Table 10 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Driveway #3/#4 at Brooks Avenue under 2035 Build-Out conditions and 2035 Build-Out Improved conditions.

Table 10: Driveway #3/#4 at Brooks Avenue

Driveway #3/#4 at Brooks Avenue						
Condition	Measure	EB (Brooks Avenue)	WB (Brooks Avenue)	NB (Driveway #4)	SB (Driveway #3)	Intersection
AM Peak Hour						
2035 Build-Out	LOS (Delay)	-	-	F (Err)	F (Err)	-
2035 Build-Out Improved	LOS (Delay)	B (15.6)	B (16.2)	C (22.4)	B (13.6)	B (16.6)
PM Peak Hour						
2035 Build-Out	LOS (Delay)	-	-	F (Err)	F (Err)	-
2035 Build-Out Improved	LOS (Delay)	C (26.5)	C (22.4)	D (38.1)	B (17.7)	C (25.7)

Intersection Summary

As shown in Table 10, HCM 6 was unable to calculate delay results for the proposed site driveways under 2035 Build-Out conditions as designated by "F (Err)". Therefore, it can be reasonably concluded that during both peak hours under 2035 Build-Out conditions, the proposed site driveways are anticipated to experience long delays. To mitigate these impacts, a traffic signal was modeled under 2035 Build-Out Improved conditions, with the necessary road geometry and signal operations, to determine if a traffic signal warrant analysis would be necessary. As shown in the table above, the introduction of a traffic signal at this intersection reduced the impacts present under 2035 Build-Out conditions.

Traffic Signal Warrant Analysis

Based on the analysis conducted above, a traffic signal warrant analysis was conducted at this intersection based on "Warrant 3, Peak Hour" within the MUTCD for the 2035 Build-Out conditions under the same conditions utilized in Section 6.1.

It was determined that the 2035 Build-Out traffic volumes satisfy "Warrant 3, Peak Hour" and that further analysis should be performed as the development builds out to evaluate the need for a traffic signal. The traffic signal warrant calculations and analyses are attached in the Appendix.

Necessary Improvements

To accommodate site traffic accessing the proposed development, the following is improvements are likely to be needed at the site driveway:

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT

guidelines and specifications

- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 150-ft
- Construct the following along the westbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 250-ft
    - Right-turn lane
- Construct the following along the northbound approach (Driveway #4):
    - Left-turn lane with a storage length of 150-ft
    - Through lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the southbound approach (Driveway #3):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/right lane
    - Single ingress lane

6.8. *Driveway #5 at Brooks Avenue*

Table 11 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Driveway #5 at Brooks Avenue under 2035 Build-Out conditions and 2035 Build-Out conditions.

Table 11: Driveway #5 at Brooks Avenue

Driveway #5 at Brooks Avenue		
Condition	Measure	WB (Brooks Avenue)
AM Peak Hour		
2035 Build-Out	LOS (Delay)	F (53.7)
2035 Build-Out Improved	LOS (Delay)	E (39.1)
PM Peak Hour		
2035 Build-Out	LOS (Delay)	F (179.1)
2035 Build-Out Improved	LOS (Delay)	E (44.8)

Intersection Summary

As shown in Table 11, the stop-controlled approach at the intersection of Driveway #5 at Brooks Avenue was found to operate at a LOS F during both peak hour under the 2035 Build-Out conditions.

Necessary Improvements

To accommodate site traffic accessing the proposed development, the following is improvements are likely to be needed at the site driveway:

- Construct the following along the westbound approach (Brooks Avenue):
  - Stop controlled approach
  - Left-turn lane with a storage length of 150-ft
- Construct the following along the northbound approach (Driveway #5):
  - Single ingress lane and a single egress lane

6.9. *Driveway #6 at SC 253*

Table 12 summarizes the LOS and approach delay (seconds per vehicle) at the intersection of Driveway #6 at SC 253 under 2035 Build-Out conditions and 2035 Build-Out conditions.

Table 12: Driveway #6 at SC 253

Driveway #6 at SC 253		
Condition	Measure	EB (Driveway #6)
AM Peak Hour		
2035 Build-Out	LOS (Delay)	D (27.0)
2035 Build-Out Improved	LOS (Delay)	C (22.7)
PM Peak Hour		
2035 Build-Out	LOS (Delay)	F (194.0)
2035 Build-Out Improved	LOS (Delay)	D (34.8)

Intersection Summary

As shown in Table 12, the stop-controlled approach at the intersection of Driveway #6 at SC 253 was found to operate at LOS F during the PM peak hour under the 2035 Build-Out conditions.

Necessary Improvements

To accommodate site traffic accessing the proposed development, the following is improvements are likely to be needed at the site driveway:

- Construct the following along the eastbound approach (Driveway #6):
  - Stop controlled approach
  - Left-turn lane with a storage length of 150-ft
  - Right-turn lane
  - Single ingress lane
- Construct the following along the northbound approach (SC 253):
  - Left-turn lane with a storage length of 150-ft

7. Multimodal Considerations

As a part of the proposed development, it is anticipated that the mixed-use development will generate multimodal trips (i.e. pedestrian and bicycle) along the existing Swamp Rabbit Trail that runs parallel to the south boundary of the site.

To provide for a conservative traffic analysis, no multimodal reductions were assumed, and all generated trips were analyzed as vehicular trips. However, to accommodate multimodal travel, it is recommended that the development provide access points to the Swamp Rabbit Trail along the south boundary of the site. These access points should be coordinated with Greenville County Parks, Recreation, and Tourism.

8. Conclusion

The purpose of this traffic impact analysis is to review the vehicular traffic impacts resulting from a proposed mixed-use development along Old Buncombe Road (S-13) in Greenville County, SC. The objectives of this study are to:

- Estimate trip generation and distribution for the proposed development
- Perform intersection capacity analyses for the identified study area
- Determine the potential traffic impacts of the proposed development
- Develop recommendations for needed roadway and operational improvements to accommodate the proposed development's traffic impacts

With a masterplan development of this magnitude, changes can and will happen to the plan. Therefore, with each plan development submittal, a technical memorandum, prepared by a professional engineer shall be provided. The technical memorandum will be considered an addendum to the masterplan TIS, and as such will spell out the required infrastructure mitigation needed for the specific development submittal/phase. This will allow the development to provide an accurate assessment of the mitigation needs reflective of potential changes in the market and the development masterplan.

The proposed development site is located west of SC 253, and is bounded by North Franklin Road (S-87) to the north and the Swamp Rabbit Trail to the south. The proposed development site is split by Old Buncombe Road (S-13) and Brooks Avenue. The specific land uses and intensities are yet to be determined; however, for the purposes of this analysis, we assumed the buildout year of 2035 and will be accessed via six (6) full-access driveways. The proposed development consists of the following land uses and intensities:

- 112,500 SF Mini Warehouse
- 1,660 Units of Multifamily Housing (Mid-Rise)
- 200 Room Hotel
- 3,480,000 SF General Office Space
- 872,200 SF Retail Space
- 18,000 SF High Turnover (Sit Down) Restaurants
- 18,000 SF Fast Food Restaurants with Drive-Through

This report summarizes the analyses of existing year conditions during the AM and PM peak hours at the following intersections:

- Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13) – Unsignalized
- School Road at North Franklin Road (S-87) – Unsignalized
- Old Buncombe Road (S-13) at SC 253 – Signalized
- Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87) – Signalized
- SC 253 at Brooks Avenue/Hilltop Avenue – Unsignalized

Analyses of future year conditions during the AM and PM peak hours are summarized at the below intersections, in addition to the previously mentioned intersections:

- Driveway #2 at Old Buncombe Road (S-13)
- Driveway #3/#4 at Brooks Avenue
- Driveway #5 at Brooks Avenue
- Driveway #6 at SC 253

Based on the results of the analyses contained within the report, the following improvements are likely to be needed to mitigate impacts of the full buildout of the development:

<u>Brooks Avenue/Driveway #1 at Old Buncombe Road (S-13)</u>

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 300-ft
    - Convert the existing shared left/right lane to a shared through/left lane
    - Right-turn lane with a storage length of 325-ft
- Construct the following along the westbound approach (Driveway #1):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/left lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the northbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 150-ft
- Construct the following along the southbound approach (Old Buncombe Road):
    - Left-turn lane with a storage length of 250-ft
    - Additional through lane
    - Right-turn lane with a storage length of 350-ft

<u>Old Buncombe Road (S-13) at SC 253</u>

- Construct the following along the eastbound approach (Old Buncombe Road):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Additional through lane
    - Dual right-turn lanes with storage lengths of 300-ft
- Construct the following along the westbound approach (Old Buncombe Road):
    - Convert the existing left-turn lane to an additional through lane and construct a left-turn lane with a storage length of 250-ft
- Construct the following along the northbound approach (SC 253):
    - Dual left-turn lanes with storage lengths of 500-ft

- Construct the following along the southbound approach (SC 253):
    - Right-turn lane with a storage length of 350-ft

Old Buncombe Road (S-13) at North Franklin Road/Sulphur Springs Road (S-87)

- Construct the following along the eastbound approach (Sulphur Springs Road):
    - Right-turn lane with a storage length of 350-ft
- Construct the following along the westbound approach (North Franklin Road):
    - Modify the existing left-turn signal operation from permitted only to permitted+protected
- Construct the following along the northbound approach (Old Buncombe Road):
    - Dual left-turn lanes with storage lengths of 350-ft
    - Additional through lane
- Construct the following along the southbound approach (Old Buncombe Road):
    - Additional through lane

SC 253 at Brooks Avenue/Hilltop Avenue

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Right-turn lane
- Construct the following along the northbound approach (SC 253):
    - Dual left-turn lanes with storage lengths of 250-ft
- Construct the following along the southbound approach (SC 253):
    - Left-turn lane with a storage length of 150-ft
    - Right-turn lane with a storage length of 300-ft

Driveway #2 at Old Buncombe Road (S-13)

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Old Buncombe Road):
    - Additional through lane
- Construct the following along the westbound approach (Old Buncombe Road):
    - Dual left-turn lanes with storage lengths of 250-ft
    - Additional through lane
- Construct the following along the northbound approach (Driveway #2):
    - Dual left-turn lanes with a 250-ft storage length and an egress lane
    - Dual right-turn lanes with a 350-ft storage length and an egress lane
    - Two ingress lanes

Driveway #3/#4 at Brooks Avenue

- Install a traffic signal upon meeting MUTCD warrants and according to SCDOT guidelines and specifications
- Construct the following along the eastbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 150-ft
- Construct the following along the westbound approach (Brooks Avenue):
    - Left-turn lane with a storage length of 250-ft
    - Right-turn lane
- Construct the following along the northbound approach (Driveway #4):
    - Left-turn lane with a storage length of 150-ft
    - Through lane
    - Right-turn lane with a storage length of 250-ft
    - Single ingress lane
- Construct the following along the southbound approach (Driveway #3):
    - Left-turn lane with a storage length of 350-ft
    - Shared through/right lane
    - Single ingress lane

Driveway #5 at Brooks Avenue

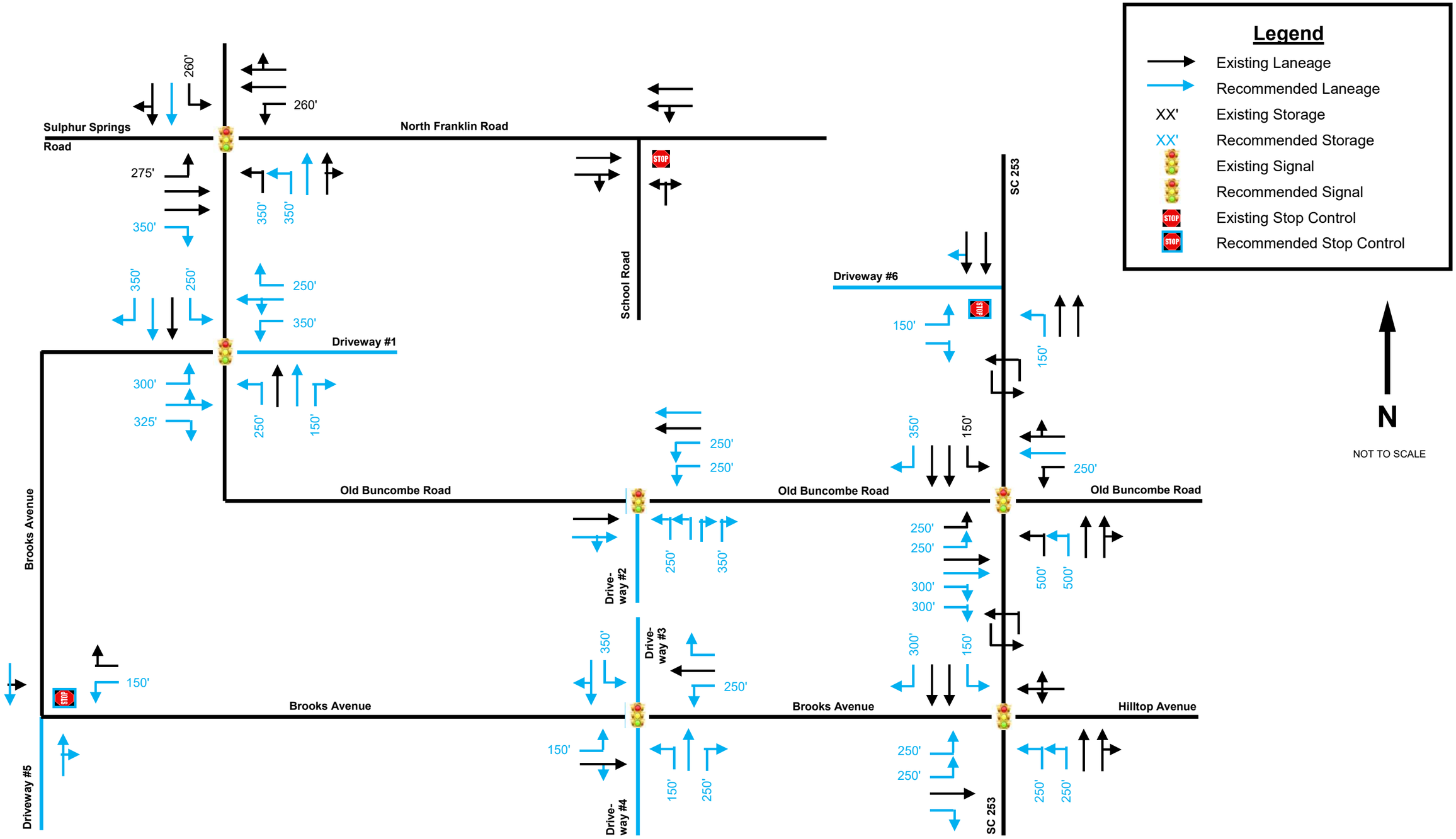
- Construct the following along the westbound approach (Brooks Avenue):
    - Stop controlled approach
    - Left-turn lane with a storage length of 150-ft
- Construct the following along the northbound approach (Driveway #5):
    - Single ingress lane and a single egress lane

Driveway #6 at SC 253

- Construct the following along the eastbound approach (Driveway #6):
    - Stop controlled approach
    - Left-turn lane with a storage length of 150-ft
    - Right-turn lane
    - Single ingress lane
- Construct the following along the northbound approach (SC 253):
    - Left-turn lane with a storage length of 150-ft

Additionally, to accommodate multimodal travel, it is recommended that the development provide access points to the Swamp Rabbit Trail along the south boundary of the site. These access points should be coordinated with Greenville County Parks, Recreation, and Tourism.

Figure 11 shows the recommended laneage at the study area intersections as described above.



Kimley»Horn	On The Trail Traffic Impact Analysis January 2021	Recommended Laneage	Figure 11

Appendices

Appendix A
Raw Turning Movement Count

Prepared by National Data & Surveying Services

Old Buncombe Rd/CR 13 & Brooks Ave/CR 507

Peak Hour Turning Movement Count

ID: 20-150052-001
City: Greenville

Day: Tuesday
Date: 11/17/2020

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Old Buncombe Rd/CR 13 — SOUTHBOUND

AM	13	394	0	0	317	AM
NOON	0	0	0	0	0	NOON
PM	4	301	0	0	430	PM

Brooks Ave/CR 507 — EASTBOUND

AM	NOON	PM
20	0	7
0	0	0
7	0	10
0	0	0
4	0	7
AM	NOON	PM

Brooks Ave/CR 507 — WESTBOUND

PM	NOON	AM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
PM	NOON	AM

Old Buncombe Rd/CR 13 — NORTHBOUND

PM	308	0	3	420	0	PM
NOON	0	0	0	0	0	NOON
AM	398	0	7	310	0	AM

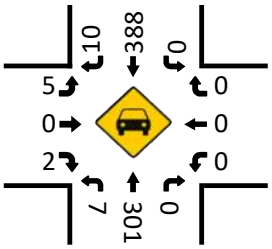
Turning movements (Southbound): 0 1 0 0
Turning movements (Eastbound): 0 0 1 0
Turning movements (Westbound): 0 0 0 0
Turning movements (Northbound): 0 0 1 0

CONTROL

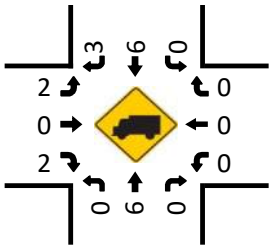
1-Way Stop (EB)

	AM	NOON	PM
TEV	735	0	745
PHF	0.72		0.95

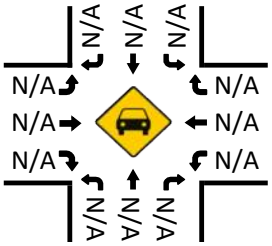
Cars (AM)



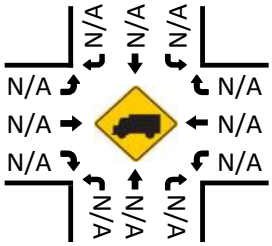
HT (AM)



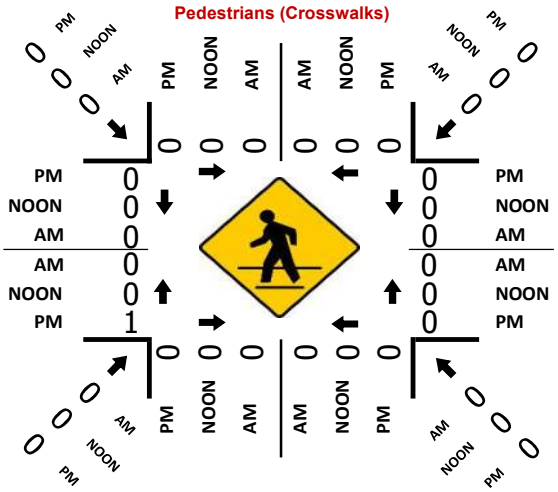
Cars (NOON)



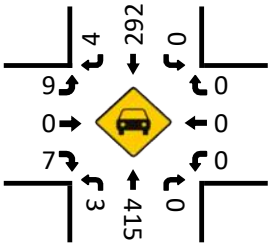
HT (NOON)



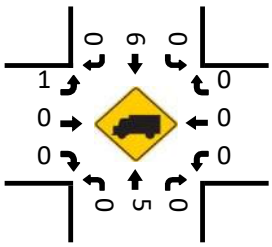
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

School Rd & N Franklin Rd

Peak Hour Turning Movement Count

ID: 20-150052-002
City: Greenville

Day: Tuesday
Date: 11/17/2020

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (School Rd)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (N Franklin Rd)

AM	NOON	PM	
203	0	370	⇦
0	0	0	↶ 0
0	0	0	↱ 0
391	0	324	→ 2
4	0	1	↳ 0

WESTBOUND (N Franklin Rd)

PM	NOON	AM	
0	0	0	0 ↰
364	0	202	2 ←
4	0	3	0 ↲
0	0	0	0 ↺
326	0	395	⇨

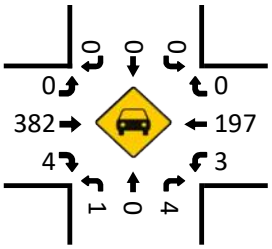
NORTHBOUND (School Rd)

PM	5	0	6	0	2	PM
NOON	0	0	0	0	0	NOON
AM	7	0	1	0	4	AM

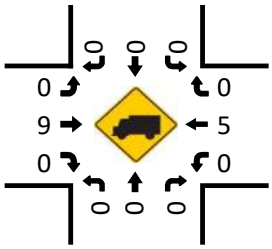
0	0	1	0

CONTROL			
1-Way Stop (NB)			
TEV	605	0	701
	AM	NOON	PM
PHF	0.75		0.87

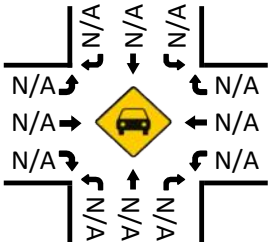
Cars (AM)



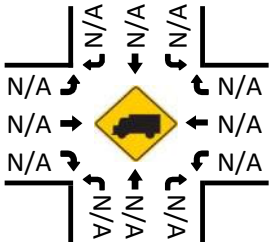
HT (AM)



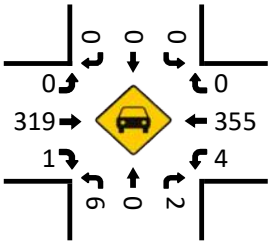
Cars (NOON)



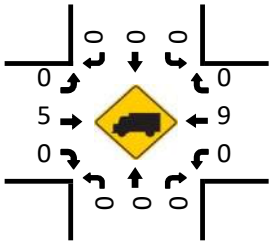
HT (NOON)



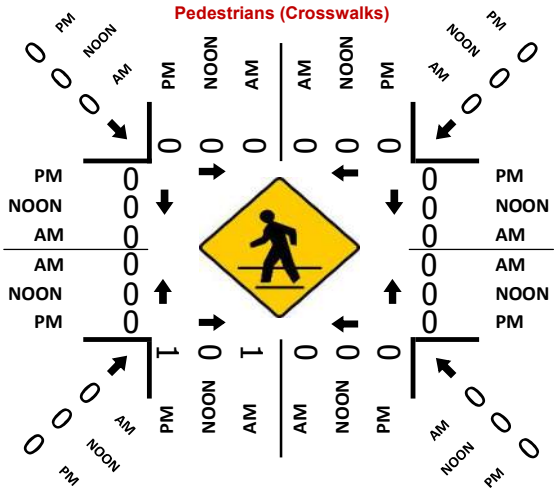
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

W Blue Ridge Dr/SR 253 & Old Buncombe Rd/CR 13

Peak Hour Turning Movement Count

ID: 20-150052-003
City: Greenville

Day: Tuesday
Date: 11/17/2020

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

W Blue Ridge Dr/SR 253 — SOUTHBOUND

AM	27	338	6	0	399	AM
NOON	0	0	0	0	0	NOON
PM	21	459	10	1	550	PM
	0	2	1	0		

Old Buncombe Rd/CR 13 — EASTBOUND

AM	NOON	PM	
315	0	424	
0	0	0	0
19	0	24	1
218	0	150	1
142	0	131	0
AM	NOON	PM	

Old Buncombe Rd/CR 13 — WESTBOUND

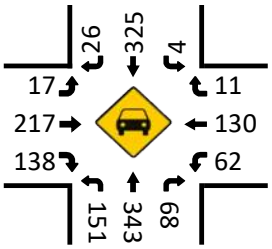
	PM	NOON	AM
0	20	0	12
1	246	0	135
1	91	0	68
0	0	0	0
	214	0	293
	PM	NOON	AM

W Blue Ridge Dr/SR 253 — NORTHBOUND

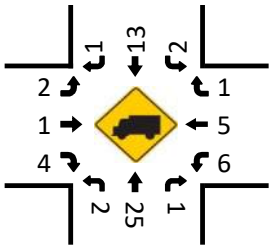
PM	681	0	157	505	54	PM
NOON	0	0	0	0	0	NOON
AM	548	0	153	368	69	AM
		0	1	2	0	

CONTROL			
Signalized			
TEV	1555	0	1869
	AM	NOON	PM
PHF	0.78		0.92

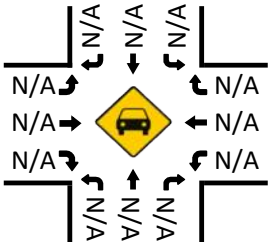
Cars (AM)



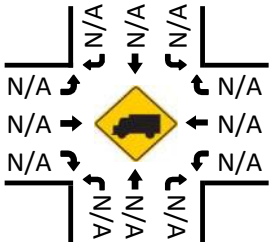
HT (AM)



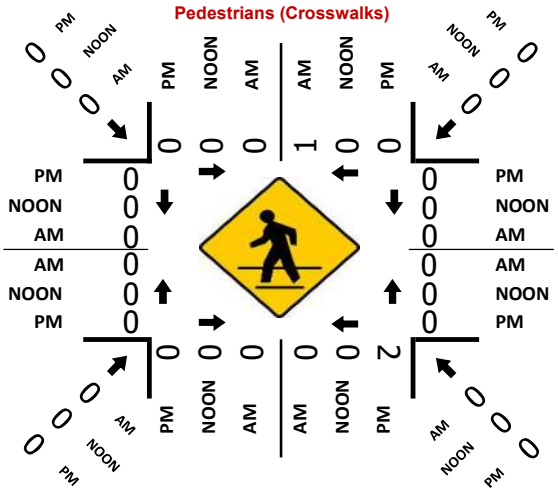
Cars (NOON)



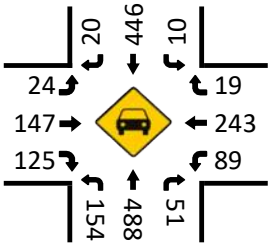
HT (NOON)



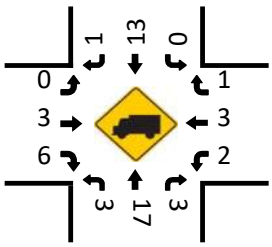
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Old Buncombe Rd/CR 13 & Sulphur Springs Rd/N Franklin Rd/CR 87

Peak Hour Turning Movement Count

ID: 20-150052-004
City: Greenville

Day: Tuesday
Date: 11/17/2020

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Old Buncombe Rd/CR 13 — SOUTHBOUND

AM	72	237	65	0	262	AM
NOON	0	0	0	0	0	NOON
PM	120	207	44	0	444	PM
	0	1	1	0		

Sulphur Springs Rd/N Franklin Rd — EASTBOUND

AM	NOON	PM	
299	0	486	
0	0	0	0
75	0	92	1
312	0	223	2
73	0	59	0
AM	NOON	PM	

Sulphur Springs Rd/N Franklin Rd — WESTBOUND

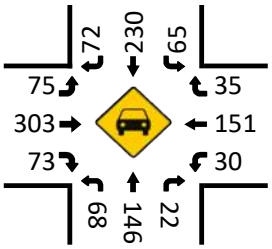
PM	NOON	AM	
60	0	35	0
271	0	153	2
27	0	32	1
0	0	0	0
304	0	399	
PM	NOON	AM	

CONTROL			
Signalized			
TEV	1302	0	1527
	AM	NOON	PM
PHF	0.79		0.96

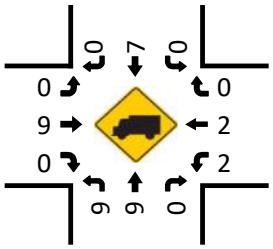
Old Buncombe Rd/CR 13 — NORTHBOUND

PM	293	0	95	292	37	PM
NOON	0	0	0	0	0	NOON
AM	342	0	74	152	22	AM
		0	1	1	0	

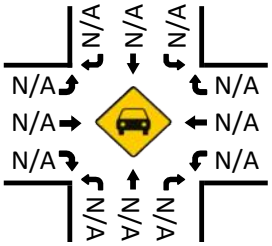
Cars (AM)



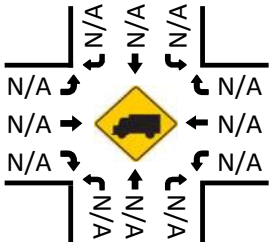
HT (AM)



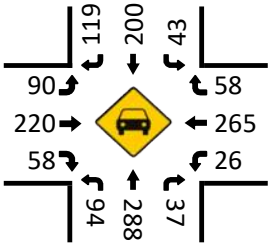
Cars (NOON)



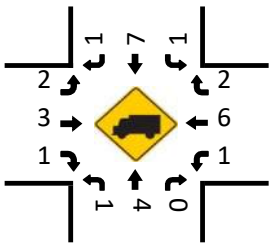
HT (NOON)



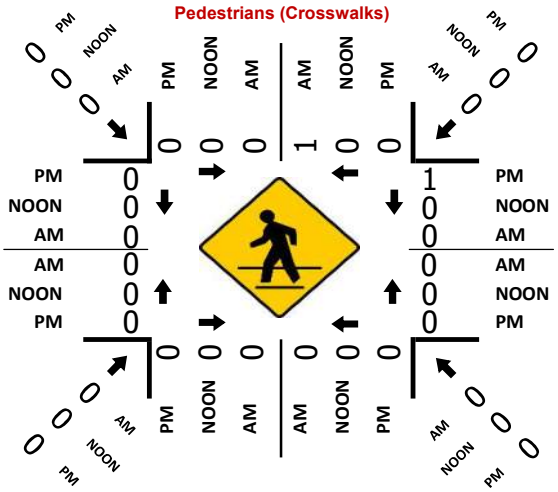
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
1
0
0
1
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

W Blue Ridge Dr/SR 253 & Brooks Ave/Hilltop Ave/CR 507

Peak Hour Turning Movement Count

ID: 20-150052-005
City: Greenville

Day: Tuesday
Date: 11/17/2020

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

W Blue Ridge Dr/SR 253 — SOUTHBOUND

AM	2	537	4	0	596	AM
NOON	0	0	0	0	0	NOON
PM	6	674	3	0	724	PM

Brooks Ave/Hilltop Ave/CR 507 — EASTBOUND

AM	NOON	PM	
24	0	36	
0	0	0	0
0	0	5	0
2	0	0	1
44	0	21	0
AM	NOON	PM	

Brooks Ave/Hilltop Ave/CR 507 — WESTBOUND

PM	NOON	AM	
4	0	3	0
3	0	1	1
6	0	6	0
0	0	0	0
22	0	25	
PM	NOON	AM	

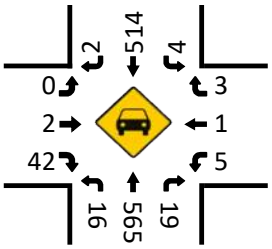
W Blue Ridge Dr/SR 253 — NORTHBOUND

PM	702	1	27	715	19	PM
NOON	0	0	0	0	0	NOON
AM	587	0	21	593	19	AM

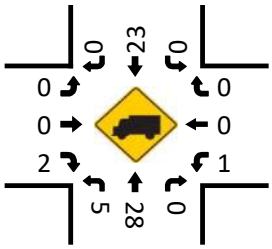
0	2	0	0	
0	0	2	0	

CONTROL			
2-Way Stop (EB/WB)			
TEV	1232	0	1484
	AM	NOON	PM
PHF	0.80		0.92

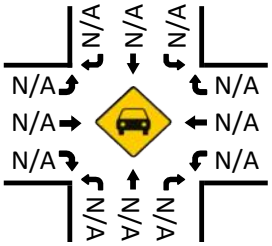
Cars (AM)



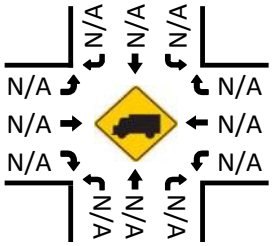
HT (AM)



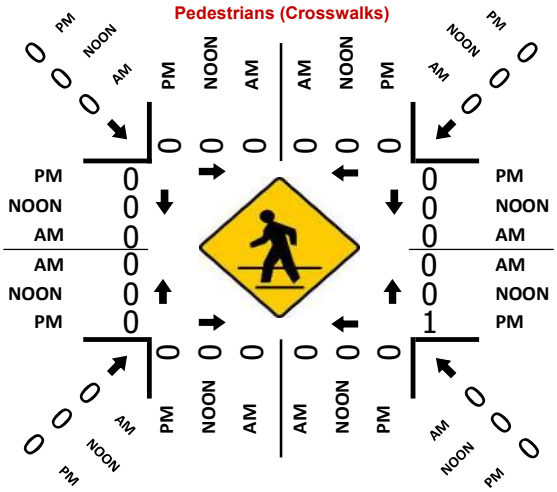
Cars (NOON)



HT (NOON)



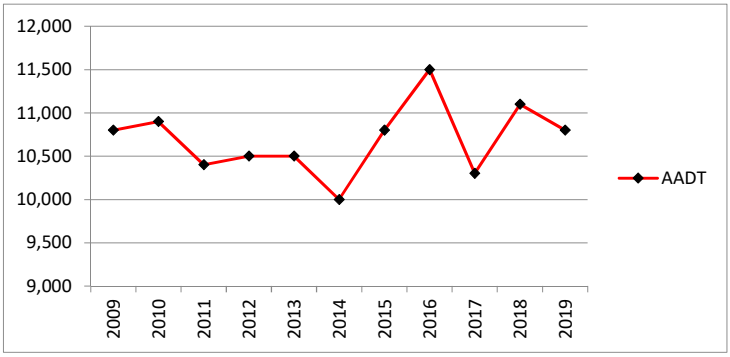
Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0

Appendix B
Historic Growth Rate Development Worksheet

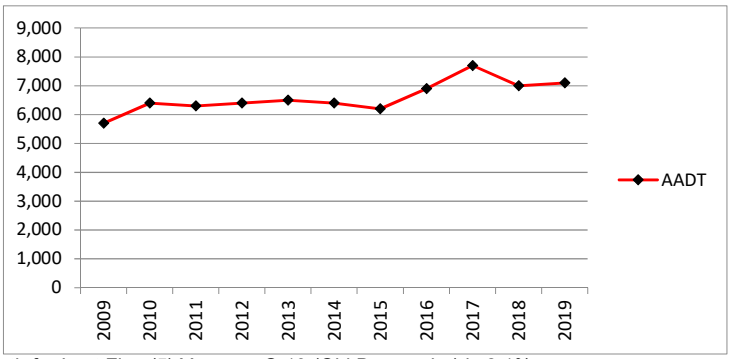
Annual Average Daily Traffic (AADT) from the South Carolina Department of Transportation (SCDOT)

Station	397
Route	S-87 (North Franklin)
Location	US 25 to SC 253
2009	10,800
2010	10,900
2011	10,400
2012	10,500
2013	10,500
2014	10,000
2015	10,800
2016	11,500
2017	10,300
2018	11,100
2019	10,800



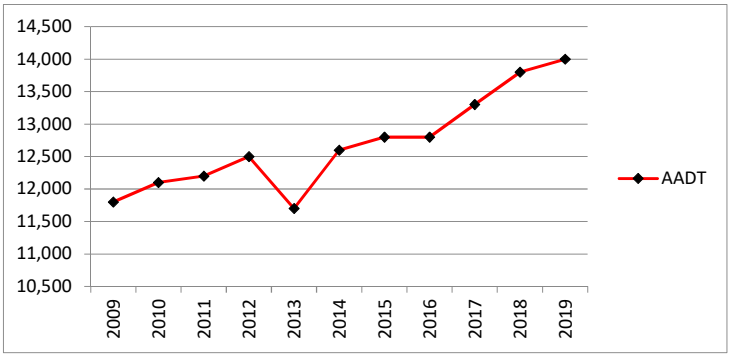
Annual Exponential Growth for Last Five (5) Years --- S-87 (North Franklin) is 1.6%
Annual Exponential Growth for Last Ten (10) Years --- S-87 (North Franklin) is 0%

Station	497
Route	S-13 (Old Buncombe)
Location	SC 183 to S-46
2009	5,700
2010	6,400
2011	6,300
2012	6,400
2013	6,500
2014	6,400
2015	6,200
2016	6,900
2017	7,700
2018	7,000
2019	7,100



Annual Exponential Growth for Last Five (5) Years --- S-13 (Old Buncombe) is 2.1%
Annual Exponential Growth for Last Ten (10) Years --- S-13 (Old Buncombe) is 2.2%

Station	249
Route	SC 253
Location	SC 183 to US 276
2009	11,800
2010	12,100
2011	12,200
2012	12,500
2013	11,700
2014	12,600
2015	12,800
2016	12,800
2017	13,300
2018	13,800
2019	14,000



Annual Exponential Growth for Last Five (5) Years --- SC 253 is 2.1%
Annual Exponential Growth for Last Ten (10) Years --- SC 253 is 1.7%

TOTAL	
2009	28,300
2010	29,400
2011	28,900
2012	29,400
2013	28,700
2014	29,000
2015	29,800
2016	31,200
2017	31,300
2018	31,900
2019	31,900

Annual Exponential Growth for Last Five (5) Years --- is 1.9%
Annual Exponential Growth for Last Ten (10) Years --- is 1.2%

Appendix C
Intersection Volume Development Worksheet

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Brooks Avenue/Driveway #1 at Old Buncombe Road
COUNT DATE: November 17, 2020
AM PEAK HOUR FACTOR: 0.72
PM PEAK HOUR FACTOR: 0.95

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	8	0	4	0	0	0	0	0	8	347	0	0	0	441	15
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**8**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**8**	**347**	**0**	**0**	**0**	**441**	**15**
AM Heavy Vehicle Percentage	2%	29%	2%	50%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%	23%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	11	0	8	0	0	0	0	0	3	470	0	0	0	337	4
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**11**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**3**	**470**	**0**	**0**	**0**	**337**	**4**
PM Heavy Vehicle Percentage	2%	10%	2%	2%	2%	2%	2%	2%	2%	2%	1%	2%	2%	2%	3%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	1	0	1	0	0	0	0	0	1	52	0	0	0	66	2
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**9**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**9**	**399**	**0**	**0**	**0**	**507**	**17**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	2	0	1	0	0	0	0	0	0	70	0	0	0	50	1
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**13**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**3**	**540**	**0**	**0**	**0**	**387**	**5**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering		0%	0%	0%		0%	0%	0%		0%	**-5%**	**5%**		**15%**	**-15%**	0%
	Exiting		0%	0%	0%		**15%**	0%	**5%**		0%	0%	0%		0%	0%	0%
Diverted Trip Distribution	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New Distribution	Entering		0%	0%	0%		0%	0%	0%		**10%**	0%	**10%**		**5%**	**13%**	**15%**
	Exiting		**15%**	0%	**10%**		**10%**	0%	**5%**		0%	**13%**	0%		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		**16**	0	**5**		0	**-5**	**5**		**16**	**-16**	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	**12**	0		0	**1**	0		0	0	0		0	0	0
	Net New		**182**	0	**122**		**122**	0	**61**		**311**	**158**	**311**		**155**	**404**	**466**
AM TOTAL PROJECT TRIPS		0	**182**	**12**	**122**	0	**138**	**1**	**66**	0	**311**	**153**	**316**	0	**171**	**388**	**466**
AM 2035 BUILD-OUT TRAFFIC		**0**	**191**	**12**	**127**	**0**	**138**	**1**	**66**	**0**	**320**	**552**	**316**	**0**	**171**	**895**	**483**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		**18**	0	**6**		0	**-6**	**6**		**18**	**-18**	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	**16**	0		0	**34**	0		0	0	0		0	0	0
	Net New		**566**	0	**377**		**377**	0	**189**		**205**	**490**	**205**		**103**	**267**	**308**
PM TOTAL PROJECT TRIPS		0	**566**	**16**	**377**	0	**395**	**34**	**195**	0	**205**	**484**	**211**	0	**121**	**249**	**308**
PM 2035 BUILD-OUT TRAFFIC		**0**	**579**	**16**	**386**	**0**	**395**	**34**	**195**	**0**	**208**	**1,024**	**211**	**0**	**121**	**636**	**313**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: School Road at North Franklin Road
COUNT DATE: November 17, 2020
AM PEAK HOUR FACTOR: 0.75
PM PEAK HOUR FACTOR: 0.87

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	438	4	0	3	226	0	0	1	0	4	0	0	0	0
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**438**	**4**	**0**	**3**	**226**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**0**
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	0	363	1	0	4	408	0	0	7	0	2	0	0	0	0
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**0**	**363**	**1**	**0**	**4**	**408**	**0**	**0**	**7**	**0**	**2**	**0**	**0**	**0**	**0**
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	65	1	0	0	34	0	0	0	0	1	0	0	0	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**503**	**5**	**0**	**3**	**260**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	0	54	0	0	1	61	0	0	1	0	0	0	0	0	0
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**0**	**417**	**1**	**0**	**5**	**469**	**0**	**0**	**8**	**0**	**2**	**0**	**0**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	**1%**		**1%**	**4%**	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	**4%**	0%		0%	0%	0%		**1%**	0%	**1%**		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	**49**	**31**		**31**	**124**	0		**12**	0	**12**		0	0	0
AM TOTAL PROJECT TRIPS		0	0	**49**	**31**	0	**31**	**124**	0	0	**12**	0	**12**	0	0	0	0
AM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**552**	**36**	**0**	**34**	**384**	**0**	**0**	**13**	**0**	**17**	**0**	**0**	**0**	**0**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	**151**	**21**		**21**	**82**	0		**38**	0	**38**		0	0	0
PM TOTAL PROJECT TRIPS		0	0	**151**	**21**	0	**21**	**82**	0	0	**38**	0	**38**	0	0	0	0
PM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**568**	**22**	**0**	**26**	**551**	**0**	**0**	**46**	**0**	**40**	**0**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Old Buncombe Road at SC 253
COUNT DATE: November 17, 2020
AM PEAK HOUR FACTOR: 0.78
PM PEAK HOUR FACTOR: 0.92

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	21	244	159	0	76	151	13	0	171	412	77	0	7	379	30
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**21**	**244**	**159**	**0**	**76**	**151**	**13**	**0**	**171**	**412**	**77**	**0**	**7**	**379**	**30**
AM Heavy Vehicle Percentage	2%	11%	0%	3%	2%	9%	4%	8%	2%	1%	7%	1%	2%	33%	4%	4%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	27	168	147	0	102	276	22	0	176	566	60	1	11	514	24
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**27**	**168**	**147**	**0**	**102**	**276**	**22**	**0**	**176**	**566**	**60**	**1**	**11**	**514**	**24**
PM Heavy Vehicle Percentage	2%	2%	2%	5%	2%	2%	1%	5%	2%	2%	3%	6%	2%	2%	3%	5%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	3	36	24	0	11	23	2	0	26	62	12	0	1	57	4
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**24**	**280**	**183**	**0**	**87**	**174**	**15**	**0**	**197**	**474**	**89**	**0**	**8**	**436**	**34**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	4	25	22	0	15	41	3	0	26	85	9	0	2	77	4
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**31**	**193**	**169**	**0**	**117**	**317**	**25**	**0**	**202**	**651**	**69**	**1**	**13**	**591**	**28**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	0%		**5%**	**9%**	**1%**		**15%**	**1%**	0%		0%	**5%**	**13%**
Distribution	Exiting		**13%**	**9%**	**15%**		0%	0%	0%		0%	**5%**	**5%**		**1%**	**1%**	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**158**	**110**	**183**		**156**	**280**	**31**		**466**	**92**	**61**		**12**	**167**	**404**
AM TOTAL PROJECT TRIPS		0	**158**	**110**	**183**	0	**156**	**280**	**31**	0	**466**	**92**	**61**	0	**12**	**167**	**404**
AM 2035 BUILD-OUT TRAFFIC		**0**	**182**	**390**	**366**	**0**	**243**	**454**	**46**	**0**	**663**	**566**	**150**	**0**	**20**	**603**	**438**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**490**	**340**	**566**		**103**	**185**	**21**		**308**	**209**	**188**		**38**	**140**	**266**
PM TOTAL PROJECT TRIPS		0	**490**	**340**	**566**	0	**103**	**185**	**21**	0	**308**	**209**	**188**	0	**38**	**140**	**266**
PM 2035 BUILD-OUT TRAFFIC		**0**	**521**	**533**	**735**	**0**	**220**	**502**	**46**	**0**	**510**	**860**	**257**	**1**	**51**	**731**	**294**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Old Buncombe Road at Franklin Road/Sulphur Springs Road
COUNT DATE: November 17, 2020
AM PEAK HOUR FACTOR: 0.79
PM PEAK HOUR FACTOR: 0.96

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	84	349	82	0	36	171	39	0	83	170	25	0	73	265	81
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**84**	**349**	**82**	**0**	**36**	**171**	**39**	**0**	**83**	**170**	**25**	**0**	**73**	**265**	**81**
AM Heavy Vehicle Percentage	2%	2%	3%	2%	2%	6%	1%	2%	2%	8%	4%	2%	2%	2%	3%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	103	250	66	0	30	304	67	0	106	327	41	0	49	232	134
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**103**	**250**	**66**	**0**	**30**	**304**	**67**	**0**	**106**	**327**	**41**	**0**	**49**	**232**	**134**
PM Heavy Vehicle Percentage	2%	2%	1%	2%	2%	4%	2%	3%	2%	1%	1%	2%	2%	2%	3%	1%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	13	52	12	0	5	26	6	0	12	25	4	0	11	40	12
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**97**	**401**	**94**	**0**	**41**	**197**	**45**	**0**	**95**	**195**	**29**	**0**	**84**	**305**	**93**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	15	37	10	0	4	45	10	0	16	49	6	0	7	35	20
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**118**	**287**	**76**	**0**	**34**	**349**	**77**	**0**	**122**	**376**	**47**	**0**	**56**	**267**	**154**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	**15%**		**4%**	0%	0%		0%	0%	0%		**1%**	**14%**	0%
Distribution	Exiting		0%	0%	0%		0%	0%	**1%**		**15%**	**14%**	**4%**		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	0	**466**		**124**	0	**12**		**182**	**170**	**49**		**31**	**435**	0
AM TOTAL PROJECT TRIPS		0	0	0	**466**	0	**124**	0	**12**	0	**182**	**170**	**49**	0	**31**	**435**	0
AM 2035 BUILD-OUT TRAFFIC		**0**	**97**	**401**	**560**	**0**	**165**	**197**	**57**	**0**	**277**	**365**	**78**	**0**	**115**	**740**	**93**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	0	**309**		**82**	0	**38**		**566**	**528**	**151**		**21**	**287**	0
PM TOTAL PROJECT TRIPS		0	0	0	**309**	0	**82**	0	**38**	0	**566**	**528**	**151**	0	**21**	**287**	0
PM 2035 BUILD-OUT TRAFFIC		**0**	**118**	**287**	**385**	**0**	**116**	**349**	**115**	**0**	**688**	**904**	**198**	**0**	**77**	**554**	**154**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: SC 253 at Brooks Avenue/Hilltop Avenue
COUNT DATE: November 17, 2020
AM PEAK HOUR FACTOR: 0.8
PM PEAK HOUR FACTOR: 0.92

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	2	49	0	7	1	3	0	24	664	21	0	4	601	2
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**2**	**49**	**0**	**7**	**1**	**3**	**0**	**24**	**664**	**21**	**0**	**4**	**601**	**2**
AM Heavy Vehicle Percentage	2%	2%	2%	5%	2%	17%	2%	2%	2%	24%	5%	2%	2%	2%	4%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	6	0	24	0	7	3	4	0	30	801	21	1	3	755	7
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**6**	**0**	**24**	**0**	**7**	**3**	**4**	**0**	**30**	**801**	**21**	**1**	**3**	**755**	**7**
PM Heavy Vehicle Percentage	2%	2%	2%	5%	2%	2%	2%	2%	2%	7%	3%	5%	2%	33%	3%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	0	7	0	1	0	0	0	4	99	3	0	1	90	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**2**	**56**	**0**	**8**	**1**	**3**	**0**	**28**	**763**	**24**	**0**	**5**	**691**	**2**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	1	0	4	0	1	0	1	0	4	120	3	0	0	113	1
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**7**	**0**	**28**	**0**	**8**	**3**	**5**	**0**	**34**	**921**	**24**	**1**	**3**	**868**	**8**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		**30%**	**-30%**	0%		0%	**-20%**	**20%**
Distribution	Exiting		**30%**	0%	**20%**		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	0%		0%	0%	0%		**14%**	**16%**	0%		0%	0%	**10%**
Distribution	Exiting		**10%**	0%	**14%**		0%	0%	0%		0%	0%	0%		0%	**16%**	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		**31**	0	**21**		0	0	0		**31**	**-31**	0		0	**-21**	**21**
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**122**	0	**170**		0	0	0		**435**	**497**	0		0	**195**	**311**
AM TOTAL PROJECT TRIPS		0	**153**	0	**191**	0	0	0	0	0	**466**	**466**	0	0	0	**174**	**332**
AM 2035 BUILD-OUT TRAFFIC		**0**	**153**	**2**	**247**	**0**	**8**	**1**	**3**	**0**	**494**	**1,229**	**24**	**0**	**5**	**865**	**334**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		**36**	0	**24**		0	0	0		**36**	**-36**	0		0	**-24**	**24**
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**378**	0	**528**		0	0	0		**286**	**327**	0		0	**604**	**205**
PM TOTAL PROJECT TRIPS		0	**414**	0	**552**	0	0	0	0	0	**322**	**291**	0	0	0	**580**	**229**
PM 2035 BUILD-OUT TRAFFIC		**0**	**421**	**0**	**580**	**0**	**8**	**3**	**5**	**0**	**356**	**1,212**	**24**	**1**	**3**	**1,448**	**237**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Driveway #2 at Old Buncombe Road
COUNT DATE: -
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.9

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	424	0	0	0	353	0	0	0	0	0	0	0	0	0
AM Balanced Volumes	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**424**	**0**	**0**	**0**	**352**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	0	342	0	0	0	475	0	0	0	0	0	0	0	0	0
PM Balanced Volumes	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**0**	**342**	**0**	**0**	**0**	**476**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	63	0	0	0	53	0	0	0	0	0	0	0	0	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**487**	**0**	**0**	**0**	**405**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	0	51	0	0	0	71	0	0	0	0	0	0	0	0	0
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**0**	**393**	**0**	**0**	**0**	**547**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	**-15%**	**15%**		**10%**	**-10%**	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		**10%**	0%	**15%**		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	**13%**		**17%**	**20%**	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	**20%**	0%		0%	0%	0%		**13%**	0%	**17%**		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	**-16**	**16**		**10**	**-10**	0		**10**	0	**16**		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	**243**	**404**		**528**	**622**	0		**158**	0	**207**		0	0	0
AM TOTAL PROJECT TRIPS		0	0	**227**	**420**	0	**538**	**612**	0	0	**168**	0	**223**	0	0	0	0
AM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**714**	**420**	**0**	**538**	**1,017**	**0**	**0**	**168**	**0**	**223**	**0**	**0**	**0**	**0**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	**-18**	**18**		**12**	**-12**	0		**12**	0	**18**		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		0	**755**	**266**		**349**	**410**	0		**490**	0	**641**		0	0	0
PM TOTAL PROJECT TRIPS		0	0	**737**	**284**	0	**361**	**398**	0	0	**502**	0	**659**	0	0	0	0
PM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**1,130**	**284**	**0**	**361**	**945**	**0**	**0**	**502**	**0**	**659**	**0**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Driveway #3/#4 at Brooks Avenue
COUNT DATE: -
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.9

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	52	0	0	0	27	0	0	0	0	0	0	0	0	0
AM Balanced Volumes	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**51**	**0**	**0**	**0**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	0	29	0	0	0	40	0	0	0	0	0	0	0	0	0
PM Balanced Volumes	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**0**	**30**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**59**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**0**	**34**	**0**	**0**	**0**	**46**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		**3%**	0%	**2%**		**9%**	**2%**	**13%**		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	**2%**	0%		0%	0%	0%		**2%**	0%	**9%**		**13%**	0%	**3%**

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	**120**	0		0	**120**	0
	Net New		**93**	**24**	**62**		**280**	**62**	**404**		**24**	0	**110**		**158**	0	**37**
AM TOTAL PROJECT TRIPS		0	**93**	**24**	**62**	0	**280**	**62**	**404**	0	**24**	**120**	**110**	0	**158**	**120**	**37**
AM 2035 BUILD-OUT TRAFFIC		**0**	**93**	**83**	**62**	**0**	**280**	**93**	**404**	**0**	**24**	**120**	**110**	**0**	**158**	**120**	**37**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	**275**	0		0	**275**	0
	Net New		**62**	**75**	**41**		**185**	**40**	**266**		**75**	0	**340**		**491**	0	**114**
PM TOTAL PROJECT TRIPS		0	**62**	**75**	**41**	0	**185**	**40**	**266**	0	**75**	**275**	**340**	0	**491**	**275**	**114**
PM 2035 BUILD-OUT TRAFFIC		**0**	**62**	**109**	**41**	**0**	**185**	**86**	**266**	**0**	**75**	**275**	**340**	**0**	**491**	**275**	**114**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Driveway #5 at Brooks Avenue
COUNT DATE: -
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.9

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	0	0	0	0	0	12	0	0	0	0	0	22	0	0
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**0**
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	0	0	0	0	0	0	19	0	0	0	0	0	8	0	0
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0
PM 2021 EXISTING TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**26**	**0**	**0**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip	Entering		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Distribution	Exiting		0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%
Net New	Entering		0%	0%	0%		**2%**	0%	0%		0%	0%	0%		**5%**	**20%**	0%
Distribution	Exiting		0%	0%	0%		0%	0%	**5%**		0%	**20%**	**2%**		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	**12**	0		0	**1**	0
	Net New		0	0	0		**62**	0	**61**		0	**243**	**24**		**155**	**622**	0
AM TOTAL PROJECT TRIPS		0	0	0	0	0	**62**	0	**61**	0	0	**255**	**24**	0	**155**	**623**	0
AM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**0**	**0**	**0**	**62**	**0**	**75**	**0**	**0**	**255**	**24**	**0**	**181**	**623**	**0**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		0	0	0		0	0	0		0	0	0		0	0	0
	Diverted Trips		0	0	0		0	0	0		0	0	0		0	0	0
	Internal		0	0	0		0	0	0		0	**16**	0		0	**34**	0
	Net New		0	0	0		**41**	0	**188**		0	**755**	**75**		**103**	**410**	0
PM TOTAL PROJECT TRIPS		0	0	0	0	0	**41**	0	**188**	0	0	**771**	**75**	0	**103**	**444**	0
PM 2035 BUILD-OUT TRAFFIC		**0**	**0**	**0**	**0**	**0**	**41**	**0**	**210**	**0**	**0**	**771**	**75**	**0**	**111**	**444**	**0**

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION: Driveway #6 at SC 253
COUNT DATE: -
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.9

"AM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movements	0	0	0	0	0	0	0	0	0	0	447	0	0	0	416	0
AM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
AM 2021 EXISTING TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**446**	**0**	**0**	**0**	**416**	**0**
AM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"PM 2021 EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movements	0	0	0	0	0	0	0	0	0	0	615	0	0	0	549	0
PM Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2021 EXISTING TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**615**	**0**	**0**	**0**	**549**	**0**
PM Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

"AM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM 2035 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	67	0	0	0	62	0
TOTAL AM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM 2035 NO-BUILD TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**513**	**0**	**0**	**0**	**478**	**0**

"PM 2035 NO-BUILD TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM 2035 NO-BUILD TRAFFIC GROWTH	0	0	0	0	0	0	0	0	0	0	92	0	0	0	82	0
TOTAL PM APPROVED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2035 NO-BUILD TRAFFIC	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**707**	**0**	**0**	**0**	**631**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering		0%	0%	0%		0%	0%	0%		**3%**	**-3%**	0%		0%	**-2%**	**2%**
	Exiting		**3%**	0%	**2%**		0%	0%	0%		0%	0%	0%		0%	0%	0%
Diverted Trip Distribution	Entering																
	Exiting																
Net New Distribution	Entering		0%	0%	0%		0%	0%	0%		**2%**	0%	0%		0%	**18%**	**2%**
	Exiting		**2%**	0%	**2%**		0%	0%	0%		0%	**18%**	0%		0%	0%	0%

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		**3**	0	**2**		0	0	0		**3**	**-3**	0		0	**-2**	**2**
	Diverted Trips																
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**24**	0	**24**		0	0	0		**62**	**219**	0		0	**559**	**63**
AM TOTAL PROJECT TRIPS		0	**27**	0	**26**	0	0	0	0	0	**65**	**216**	0	0	0	**557**	**65**
AM 2035 BUILD-OUT TRAFFIC		**0**	**27**	**0**	**26**	**0**	**0**	**0**	**0**	**0**	**65**	**729**	**0**	**0**	**0**	**1,035**	**65**

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Pass - By		**4**	0	**2**		0	0	0		**4**	**-4**	0		0	**-2**	**2**
	Diverted Trips																
	Internal		0	0	0		0	0	0		0	0	0		0	0	0
	Net New		**75**	0	**75**		0	0	0		**41**	**679**	0		0	**369**	**41**
PM TOTAL PROJECT TRIPS		0	**79**	0	**77**	0	0	0	0	0	**45**	**675**	0	0	0	**367**	**43**
PM 2035 BUILD-OUT TRAFFIC		**0**	**79**	**0**	**77**	**0**	**0**	**0**	**0**	**0**	**45**	**1,382**	**0**	**0**	**0**	**998**	**43**

Appendix D
Traffic Signal Plans and Timings

SIGNAL EQUIPMENT

ONE(1) 8- PHASE FULLY ACTUATED STANDARD 170 OR 2070 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND POLE OR BASE - MOUNTED 336S OR 332A CABINET.

MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

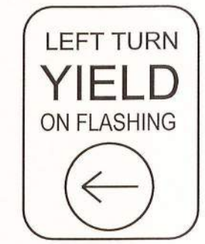
HEAD NUMBER	1,2F	2	3,4F	4	6F	6	7,8F	8	P2	P4	P6	P8
LENS	~~R~~ ~~Y~~ ~~FY~~ ~~G~~	R Y G	~~R~~ ~~Y~~ ~~FY~~ ~~G~~	R Y G	~~R~~ ~~Y~~ ~~FY~~	R Y G	~~R~~ ~~Y~~ ~~FY~~ ~~G~~	R Y G				
PHASE	1,OLA	2	3, OLB	4	OLC	6	7,OLD	8	P2	P4	P6	P8
SIZE	12"	12"	12"	12"	12"	12"	12"	12"	---	---	---	---
QUANTITY	1	2	1	2	1	2	1	2	2	2	2	2

OLA Ø1+Ø2 <FYA> OLC Ø6 <FYA>
OLB Ø3+Ø4 <FYA> OLD Ø7+Ø8 <FYA>

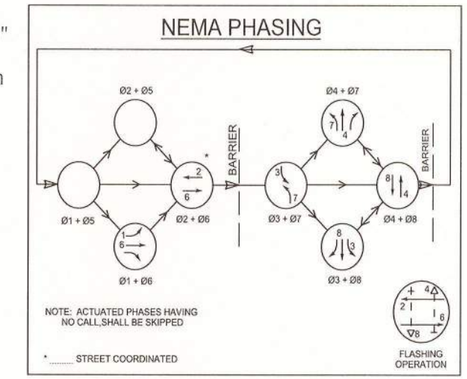
SIGNAL TIMINGS

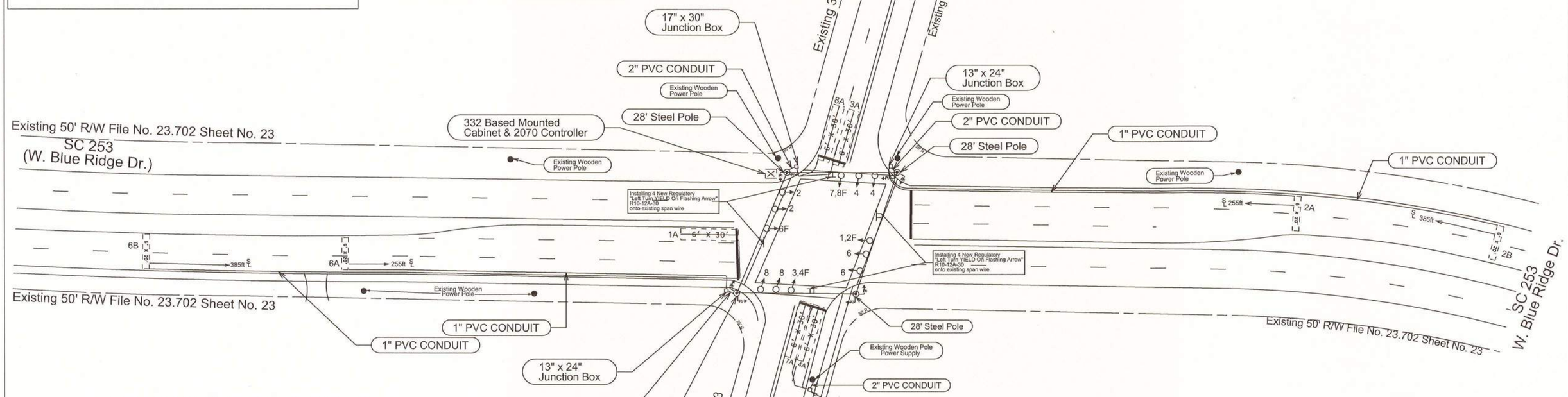
INTERVAL	PHASE 1	2	3	4		6	7	8
MIN GREEN	6	12	6	8		12	6	8
GAP EXT.	---	---	---	---		---	---	---
MAX 1	12	35	12	29		35	12	29
MAX 2	---	---	---	---		---	---	---
YELLOW CLEARANCE	3.0	4.4	3	3.6		4.4	3.0	3.6
RED CLEARANCE	3.1	1.9	2.1	2.0		1.9	2.1	2.0
WALK	0	7	0	7		7	0	7
PED CLEARANCE	0	19	0	22		19	0	22
RED REVERT	---	---	---	---		---	---	---
ADD INITIAL	---		---				---	
MAX INITIAL	---	---	---	---		---	---	---
TIME B4 REDUCTION	---	---	---	---		---	---	---
CARS B4 REDUCTION	---	---	---	---		---	---	---
TIME TO REDUCE	---	---	---	---		---	---	---
REDUCE BY	---	---	---	---		---	---	---
MIN GAP	3	3	3	3		3	3	3
DY MAX LIMIT	---	---	---	---		---	---	---
MAX STEP	---	---	---	---		---	---	---

Install New Regulatory Sign
"Left Turn YIELD On Flashing Arrow"
R10-12A-30
Onto Existing Span Wire / Mast Arm



NEMA PHASING





LOOP DETECTOR INSTALLATION CHART

PHASE/ LOOP LTR#	DETECTOR AMP NO.	DETECTOR CHAN NO.	WIRED TO PHASE(S)	LOCK X	NON-LOCK X	PULSE X	PRES X	OPERATION DELAY SEC	OPERATION EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD SWITCHING, etc.	LOOP DESIGN SIZE X	LOOP DESIGN NO.OF TURNS	LOOP DESIGN DIST. FROM ℄
1A			5		X		X			QUADRUPOLE	6' X 30'	2-4-2	-5'
2A	_	_	2	X	_	_	X	---	---	--	6' X 20'	3	255'
2B	_	_	2	X	_	_	X	---	---	--	6' X 20'	3	385'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
3A	_	_	3	_	X	_	X	---	---	QUADRUPOLE	6' X 30'	2-4-2	-5'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
4A	_	_	4	_	X	_	X	---	---	QUADRUPOLE	6' X 30'	2-4-2	-5'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
6A	_	_	6	X	_	_	X	---	---	--	6' X 20'	3	255'
6B	_	_	6	X	_	_	X	---	---	--	6' X 20'	3	385'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
7A	_	_	7	_	X	_	X	---	---	QUADRUPOLE	6' X 30'	2-4-2	-5'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
8A	_	_	8	_	X	_	X	---	---	QUADRUPOLE	6' X 30'	2-4-2	-5'
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----
--	_	_	_	_	_	_	_	---	---	----------	-----	_	----

SOUTH CAROLINA PROFESSIONAL ENGINEER
CHRISTOPHER S. KNIGHT
No. 20672
11.16.16

NOTE:
Coordinate with Existing Utilities for Placement of Conduit and Pole Foundations.
Return All Existing Traffic Signal Equipment, Poles and Stop Signs to SCDOT

ROUTE NUMBER	SC 253		S-13	
APPROACH DIRECTION	EB	WB	NB	SB
SIGNAL DESIGN SPEED	45	45	35	35
GRADE (%)	0%	0%	3.39%	+0.10%

SCDOT
South Carolina Department of Transportation
252 South Pleasantburg Drive
Greenville, South Carolina 29607 ©

This intersection border drawing including the information blocks contained within, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on the sheet without written authorization from the SCDOT Traffic Engineering office is prohibited.

DATE	REVISIONS
02/2015	Installing New "FYA" with proper signage along span wire
11/8/16	ADD #7 Phase Rotation (As-built)

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
GREENVILLE, S.C.

SUBJECT TITLE: Signal Revision (FYA)
SPECIFIC LOCATION: SC 253 @ S-13 (W. Blue Ridge Dr.) @ (S. Buncombe Rd.)
CITY: Greenville
COUNTY: Greenville

DESIGNED
DRAWN DF/SK
CHECKED
REVIEWED
RECOMMENDED

APPROVED BY
DISTRICT # TRAFFIC ENGINEER
ENGINEER

SCALE	DATE	INTERSECTION ID	INDEX NO.
1"= 30 '	11/8/2016	3369	(23) 15-1R

3369

SIGNAL EQUIPMENT

1 8 PHASE FULLY ACTUATED STANDARD 2070 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND CABINET.

6 VEHICLE DETECTOR UNITS

8 pedestrian push buttons

SIGNAL HEADS

HEAD NUMBER	1	2	8,3	4	2,5	6	7	8	P
LENS		R Y G	R ~~Y~~Y ~~G~~G	R Y G	R ~~Y~~Y ~~G~~G	R Y G		R Y G	DW
PHASE		2	3·8	4	2·5	6		8	2,4,6,8
SIZE		12"	12"	12"	12"	12"		12"	
QUANTITY		2	1	2	1	2		2	8

● steel POLES AS NECESSARY

SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)

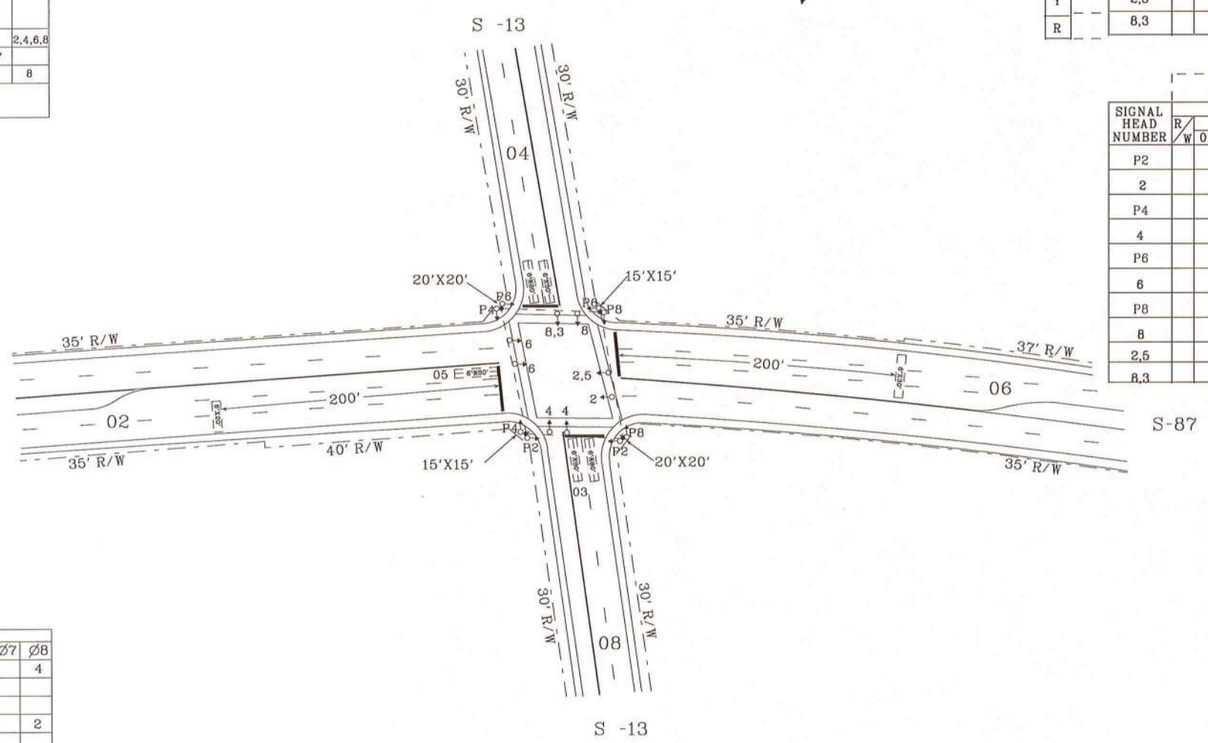
FLASH	SIGNAL HEAD NUMBER	01 — 05 R/W	CLEAR TO 02-06	01-06	02-05	BARR.	02 — 06 R/W	CLEAR TO 01-05				BARR.		03 — 07 R/W	CLEAR TO 04-08	03-08	04-07	BARR.		04 — 08 R/W	CLEAR TO 03-07				BARR.	
	P2						W					DW	DW							DW					DW	DW
Y	2						G					Y	R							R					R	R
	P4						DW					DW	DW							W					F DW	DW
R	4						R					R	R							G					Y	R
	P6						W					DW	DW							DW					DW	DW
Y	6						G					Y	R							R					R	R
	P8						DW					DW	DW							W					F DW	DW
R	8						R					R	R							G					Y	R
Y	2,5						G					Y	R							R					R	R
R	8,3						R					R	R							G					Y	R

BARRIER

ALTERNATE PHASES

SIGNAL HEAD NUMBER	01 — 06 R/W	CLEAR TO 01-05	02-06	02-05	BARR.	02 — 05 R/W	CLEAR TO 01-05	02-06	01-06	BARR.		03 — 08 R/W	CLEAR TO 03-07	04-08	03-08	04-07	BARR.		04 — 07 R/W	CLEAR TO 03-07	04-08	03-08	BARR.	
P2						DW		DW	DW		DW	DW	DW		DW	DW		DW	DW					
2						G		G	G		Y	R	R		R	R		R	R					
P4						DW		DW	DW		DW	DW	DW		DW	DW		DW	DW					
4						R		R	R		R	R	R		R	R		R	R					
P6						DW		DW	DW		DW	DW	DW		DW	DW		DW	DW					
6						R		R	R		R	R	R		R	R		R	R					
P8						DW		DW	DW		DW	DW	DW		DW	DW		DW	DW					
8						R		R	R		R	R	G		G	G		Y	R					
2,5						~~G~~G		~~Y~~G	G		~~Y~~Y	R	R		R	R		R	R					
8,3						R		R	R		R	R	~~G~~G		~~Y~~G	G		~~Y~~Y	R					

BARRIER



TRAFFIC SIGNAL SETTINGS

FUNCTIONS	SECONDS Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MIN GREEN		16	3	4	3	16		4
ADDED INIT (SEC/ACT)								
MAX INITIAL								
PASSAGE		3	2	2	2	3		2
TIME BEFORE REDUCE								
TIME TO REDUCE								
MIN GAP								
MAXIMUM I		35	16	28	16	35		28
MAXIMUM II								
YELLOW CHANGE		3.9	3.9	3.9	3.9	3.9		3.9
RED CLEAR		1.5	1.6	1.6	1.5	1.5		1.6
RECALL		MIN	OFF	OFF	OFF	MIN		OFF
DET. MEMORY		L	N	N	N	L		N
L-LOCK, N-NON-LOCK								
DET. DELAY								
DET. MODE		PR	PR	PR	PR	PR		PR
P-PULSE PR-PRESENCE								
WALK		6		6		6		6
PEDESTRIAN CLEAR		17		22		17		22

OVERLAP SETTINGS

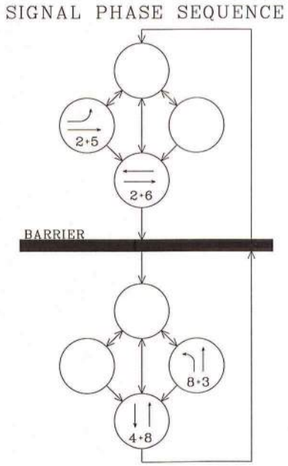
OLA _____ OLC _____

OLB _____ OLD _____

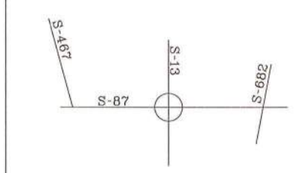
SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 25801 DIANA P. LOWERY

11/1/10

SIGNAL PHASE SEQUENCE



LOCATION MAP



ROUTE NUMBER	S-13		S-87	
APPROACH DIRECTION	NB	SB	EB	WB
SIGNAL DESIGN SPEED	40	40	40	40
GRADE (%)				

DKT. NO. 23.400A | SHEET NO. 6

DATE	REVISIONS
5/21/97	ROAD RECONSTRUCTION
11/1/10	Add Ped. heads
	replaces existing plan (23) 97-11

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA, S.C.

SUBJECT TITLE: SIGNAL REVISION

SPECIFIC LOCATION: INTERSECTION OF S-13 @ S-87

CITY: GREENVILLE | COUNTY: GREENVILLE

DESIGNED

DRAWN: DP

CHECKED

REVIEWED

RECOMMENDED

APPROVED BY: DIR. OF TRAFFIC ENGINEERING

APPROVED BY: DISTRICT TRAFFIC ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1" = 50'	11/1/10	1 OF 1	(23) 10-11

Appendix E
Intersection Capacity Analysis Results

2021 Existing Conditions

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	4	8	347	441	15
Future Volume (Veh/h)	8	4	8	347	441	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	11	6	11	482	613	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1128	624	634			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1128	624	634			
tC, single (s)	6.7	6.7	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.8	2.2			
p0 queue free %	94	99	99			
cM capacity (veh/h)	198	409	949			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	17	493	634
Volume Left	11	11	0
Volume Right	6	0	21
cSH	242	949	1700
Volume to Capacity	0.07	0.01	0.37
Queue Length 95th (ft)	6	1	0
Control Delay (s)	21.0	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	21.0	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	438	4	3	226	1	4
Future Vol, veh/h	438	4	3	226	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	584	5	4	301	1	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	589	0	746	295
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	159	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	982	-	349	701
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	982	-	347	701
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	849	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	982	-
HCM Lane V/C Ratio	0.011	-	-	0.004	-
HCM Control Delay (s)	11.3	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	244	159	76	151	13	171	412	77	7	379	30
Future Volume (veh/h)	21	244	159	76	151	13	171	412	77	7	379	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1900	1900	1767	1841	1841	1885	1796	1796	1411	1841	1841
Adj Flow Rate, veh/h	27	313	204	97	194	17	219	528	99	9	486	38
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	11	0	0	9	4	4	1	7	7	33	4	4
Cap, veh/h	416	336	219	214	571	50	259	1227	229	85	852	66
Arrive On Green	0.03	0.31	0.31	0.06	0.34	0.34	0.10	0.43	0.43	0.00	0.26	0.26
Sat Flow, veh/h	1654	1074	700	1682	1668	146	1795	2870	536	1344	3287	256
Grp Volume(v), veh/h	27	0	517	97	0	211	219	313	314	9	258	266
Grp Sat Flow(s),veh/h/ln	1654	0	1774	1682	0	1814	1795	1706	1700	1344	1749	1795
Q Serve(g_s), s	0.9	0.0	24.4	3.3	0.0	7.5	6.2	11.1	11.2	0.7	11.0	11.1
Cycle Q Clear(g_c), s	0.9	0.0	24.4	3.3	0.0	7.5	6.2	11.1	11.2	0.7	11.0	11.1
Prop In Lane	1.00		0.39	1.00		0.08	1.00		0.32	1.00		0.14
Lane Grp Cap(c), veh/h	416	0	554	214	0	621	259	729	726	0	453	465
V/C Ratio(X)	0.06	0.00	0.93	0.45	0.00	0.34	0.85	0.43	0.43	0.00	0.57	0.57
Avail Cap(c_a), veh/h	592	0	597	343	0	621	334	729	726	0	711	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	28.7	21.7	0.0	21.1	20.4	17.3	17.3	0.0	27.7	27.8
Incr Delay (d2), s/veh	0.1	0.0	21.0	1.5	0.0	0.3	14.6	0.4	0.4	0.0	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	13.0	1.3	0.0	3.1	3.1	4.0	4.0	0.0	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	49.7	23.2	0.0	21.4	35.0	17.7	17.7	0.0	28.9	28.9
LnGrp LOS	B	A	D	C	A	C	D	B	B	A	C	C
Approach Vol, veh/h		544			308			846			533	
Approach Delay, s/veh		48.1			22.0			22.2			28.4	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	28.6	8.0	35.1	0.0	43.1	10.5	32.5
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	12.0	* 35	12.0	29.0	* 35	* 35	12.0	29.0
Max Q Clear Time (g_c+I1), s	8.2	13.1	2.9	9.5	0.0	13.2	5.3	26.4
Green Ext Time (p_c), s	0.2	9.2	0.0	0.5	0.0	11.0	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	349	82	36	171	39	83	170	25	73	265	81
Future Volume (veh/h)	84	349	82	36	171	39	83	170	25	73	265	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1811	1885	1885	1781	1841	1841	1870	1856	1856
Adj Flow Rate, veh/h	106	442	104	46	216	49	105	215	32	92	335	103
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	3	3	6	1	1	8	4	4	2	3	3
Cap, veh/h	438	1134	265	323	734	163	260	671	100	430	380	117
Arrive On Green	0.06	0.40	0.40	0.25	0.25	0.25	0.06	0.43	0.43	0.28	0.28	0.28
Sat Flow, veh/h	1781	2837	662	833	2912	647	1697	1566	233	1133	1362	419
Grp Volume(v), veh/h	106	273	273	46	131	134	105	0	247	92	0	438
Grp Sat Flow(s),veh/h/ln	1781	1763	1736	833	1791	1769	1697	0	1799	1133	0	1780
Q Serve(g_s), s	2.6	7.0	7.1	2.8	3.8	3.9	2.6	0.0	5.8	4.0	0.0	14.9
Cycle Q Clear(g_c), s	2.6	7.0	7.1	2.8	3.8	3.9	2.6	0.0	5.8	4.0	0.0	14.9
Prop In Lane	1.00		0.38	1.00		0.37	1.00		0.13	1.00		0.24
Lane Grp Cap(c), veh/h	438	705	694	323	451	446	260	0	771	430	0	497
V/C Ratio(X)	0.24	0.39	0.39	0.14	0.29	0.30	0.40	0.00	0.32	0.21	0.00	0.88
Avail Cap(c_a), veh/h	774	971	957	573	987	975	581	0	793	613	0	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	13.5	13.6	18.8	19.2	19.2	15.8	0.0	12.0	18.0	0.0	21.9
Incr Delay (d2), s/veh	0.1	0.3	0.4	0.2	0.4	0.4	0.4	0.0	0.1	0.1	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.4	0.5	1.5	1.5	0.9	0.0	2.0	0.9	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	13.9	13.9	19.0	19.5	19.6	16.2	0.0	12.1	18.0	0.0	26.5
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	C
Approach Vol, veh/h		652			311			352			530	
Approach Delay, s/veh		14.1			19.5			13.3			25.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	30.8	9.5	23.2	9.4	21.4	32.7
Change Period (Y+Rc), s	5.4	* 5.5	* 5.5	5.4	5.4	* 5.5
Max Green Setting (Gmax), s	35.0	* 16	* 28	16.0	35.0	* 28
Max Q Clear Time (g_c+I1), s	9.1	4.6	16.9	4.6	5.9	7.8
Green Ext Time (p_c), s	5.9	0.1	0.8	0.1	2.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	49	7	1	3	24	664	21	4	601	2
Future Vol, veh/h	0	2	49	7	1	3	24	664	21	4	601	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	5	17	2	2	24	5	2	2	4	2
Mvmt Flow	0	3	61	9	1	4	30	830	26	5	751	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1239	1679	377	1290	1667	428	754	0	0	856	0	0
Stage 1	763	763	-	903	903	-	-	-	-	-	-	-
Stage 2	476	916	-	387	764	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.84	6.54	6.94	4.58	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.67	4.02	3.32	2.44	-	-	2.22	-	-
Pot Cap-1 Maneuver	132	94	612	106	96	575	722	-	-	780	-	-
Stage 1	363	411	-	270	354	-	-	-	-	-	-	-
Stage 2	539	349	-	569	411	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	121	86	612	87	87	575	722	-	-	780	-	-
Mov Cap-2 Maneuver	121	86	-	87	87	-	-	-	-	-	-	-
Stage 1	334	406	-	248	326	-	-	-	-	-	-	-
Stage 2	491	321	-	503	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	41.2	0.3	0.1
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	722	-	-	494	113	780	-	-
HCM Lane V/C Ratio	0.042	-	-	0.129	0.122	0.006	-	-
HCM Control Delay (s)	10.2	-	-	13.4	41.2	9.6	-	-
HCM Lane LOS	B	-	-	B	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	3	470	337	4
Future Volume (Veh/h)	11	8	3	470	337	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	15	11	4	653	468	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1132	471	474			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1132	471	474			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	93	98	100			
cM capacity (veh/h)	216	593	1088			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	657	474
Volume Left	15	4	0
Volume Right	11	0	6
cSH	295	1088	1700
Volume to Capacity	0.09	0.00	0.28
Queue Length 95th (ft)	7	0	0
Control Delay (s)	18.4	0.1	0.0
Lane LOS	C	A	
Approach Delay (s)	18.4	0.1	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	363	1	4	408	7	2
Future Vol, veh/h	363	1	4	408	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	1	5	544	9	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	485	0	767	243
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1074	-	339	758
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1074	-	337	758
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	384	-	-	1074	-
HCM Lane V/C Ratio	0.031	-	-	0.005	-
HCM Control Delay (s)	14.7	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	168	147	102	276	22	176	566	60	11	514	24
Future Volume (veh/h)	27	168	147	102	276	22	176	566	60	11	514	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1885	1885	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	35	215	188	131	354	28	226	726	77	14	659	31
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	1	1	2	3	3	2	3	3
Cap, veh/h	260	237	207	244	505	40	264	1535	163	83	1050	49
Arrive On Green	0.04	0.26	0.26	0.07	0.29	0.29	0.10	0.48	0.48	0.00	0.31	0.31
Sat Flow, veh/h	1781	921	805	1781	1724	136	1781	3216	341	1781	3428	161
Grp Volume(v), veh/h	35	0	403	131	0	382	226	398	405	14	339	351
Grp Sat Flow(s),veh/h/ln	1781	0	1725	1781	0	1861	1781	1763	1794	1781	1763	1827
Q Serve(g_s), s	1.2	0.0	20.2	4.7	0.0	16.3	7.0	13.6	13.6	0.8	14.7	14.7
Cycle Q Clear(g_c), s	1.2	0.0	20.2	4.7	0.0	16.3	7.0	13.6	13.6	0.8	14.7	14.7
Prop In Lane	1.00		0.47	1.00		0.07	1.00		0.19	1.00		0.09
Lane Grp Cap(c), veh/h	260	0	445	244	0	545	264	842	857	0	540	560
V/C Ratio(X)	0.13	0.00	0.91	0.54	0.00	0.70	0.86	0.47	0.47	0.00	0.63	0.63
Avail Cap(c_a), veh/h	431	0	562	352	0	606	321	842	857	0	692	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	32.0	24.1	0.0	28.0	21.7	15.7	15.7	0.0	26.5	26.5
Incr Delay (d2), s/veh	0.2	0.0	15.8	1.8	0.0	3.2	17.4	0.4	0.4	0.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	10.0	2.0	0.0	7.4	3.6	4.9	5.0	0.0	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	47.9	25.9	0.0	31.2	39.1	16.1	16.1	0.0	27.7	27.7
LnGrp LOS	C	A	D	C	A	C	D	B	B	A	C	C
Approach Vol, veh/h		438			513			1029			704	
Approach Delay, s/veh		45.8			29.9			21.2			27.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	33.6	8.6	31.7	0.0	48.8	11.7	28.6
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	12.0	* 35	12.0	29.0	* 35	* 35	12.0	29.0
Max Q Clear Time (g_c+I1), s	9.0	16.7	3.2	18.3	0.0	15.6	6.7	22.2
Green Ext Time (p_c), s	0.2	10.6	0.0	0.9	0.0	12.6	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	250	66	30	304	67	106	327	41	49	232	134
Future Volume (veh/h)	103	250	66	30	304	67	106	327	41	49	232	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1841	1870	1870	1885	1885	1885	1870	1856	1856
Adj Flow Rate, veh/h	130	316	84	38	385	85	134	414	52	62	294	170
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	1	1	4	2	2	1	1	1	2	3	3
Cap, veh/h	348	1095	286	333	680	149	275	740	93	351	327	189
Arrive On Green	0.08	0.39	0.39	0.23	0.23	0.23	0.07	0.45	0.45	0.30	0.30	0.30
Sat Flow, veh/h	1781	2809	735	969	2899	634	1795	1642	206	927	1103	638
Grp Volume(v), veh/h	130	200	200	38	234	236	134	0	466	62	0	464
Grp Sat Flow(s),veh/h/ln	1781	1791	1753	969	1777	1756	1795	0	1848	927	0	1741
Q Serve(g_s), s	3.5	5.2	5.4	2.1	7.9	8.1	3.3	0.0	12.6	3.6	0.0	17.4
Cycle Q Clear(g_c), s	3.5	5.2	5.4	2.1	7.9	8.1	3.3	0.0	12.6	5.7	0.0	17.4
Prop In Lane	1.00		0.42	1.00		0.36	1.00		0.11	1.00		0.37
Lane Grp Cap(c), veh/h	348	698	683	333	417	412	275	0	832	351	0	516
V/C Ratio(X)	0.37	0.29	0.29	0.11	0.56	0.57	0.49	0.00	0.56	0.18	0.00	0.90
Avail Cap(c_a), veh/h	631	919	900	603	912	901	565	0	832	457	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	14.3	14.3	20.8	23.0	23.1	16.5	0.0	13.8	19.7	0.0	23.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	1.2	1.3	0.5	0.0	0.5	0.1	0.0	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	1.9	0.5	3.2	3.2	1.2	0.0	4.7	0.7	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	14.5	14.6	20.9	24.2	24.3	17.0	0.0	14.3	19.8	0.0	32.2
LnGrp LOS	B	B	B	C	C	C	B	A	B	B	A	C
Approach Vol, veh/h		530			508			600			526	
Approach Delay, s/veh		15.2			24.0			14.9			30.8	
Approach LOS		B			C			B			C	

Timer - Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		32.0	10.5	25.7	10.6	21.4		36.2
Change Period (Y+Rc), s		5.4	* 5.5	* 5.5	5.4	5.4		* 5.5
Max Green Setting (Gmax), s		35.0	* 16	* 28	16.0	35.0		* 28
Max Q Clear Time (g_c+I1), s		7.4	5.3	19.4	5.5	10.1		14.6
Green Ext Time (p_c), s		4.2	0.1	0.8	0.1	4.9		0.7

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	24	7	3	4	30	801	21	3	755	7
Future Vol, veh/h	6	0	24	7	3	4	30	801	21	3	755	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	5	2	2	2	7	3	5	33	3	2
Mvmt Flow	8	0	30	9	4	5	38	1001	26	4	944	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1536	2060	477	1570	2051	514	953	0	0	1027	0	0
Stage 1	957	957	-	1090	1090	-	-	-	-	-	-	-
Stage 2	579	1103	-	480	961	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.24	-	-	4.76	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.27	-	-	2.53	-	-
Pot Cap-1 Maneuver	79	54	526	75	55	505	687	-	-	514	-	-
Stage 1	277	334	-	230	289	-	-	-	-	-	-	-
Stage 2	468	285	-	536	333	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	65	46	526	63	47	505	687	-	-	514	-	-
Mov Cap-2 Maneuver	65	46	-	63	47	-	-	-	-	-	-	-
Stage 1	241	328	-	200	251	-	-	-	-	-	-	-
Stage 2	397	248	-	497	327	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25	65	0.4	0
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	687	-	-	217	77	514	-	-
HCM Lane V/C Ratio	0.055	-	-	0.173	0.227	0.007	-	-
HCM Control Delay (s)	10.5	-	-	25	65	12.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.8	0	-	-

2035 No Build Conditions

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	5	9	399	507	17
Future Volume (Veh/h)	9	5	9	399	507	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	6	10	443	563	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1036	572	582			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1036	572	582			
tC, single (s)	6.7	6.7	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.8	2.2			
p0 queue free %	96	99	99			
cM capacity (veh/h)	226	439	992			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	453	582
Volume Left	10	10	0
Volume Right	6	0	19
cSH	277	992	1700
Volume to Capacity	0.06	0.01	0.34
Queue Length 95th (ft)	5	1	0
Control Delay (s)	18.8	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	18.8	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	503	5	3	260	1	5
Future Vol, veh/h	503	5	3	260	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	559	6	3	289	1	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	565	0	713	283
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	151	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1003	-	366	714
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1003	-	365	714
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	616	-	-	1003	-
HCM Lane V/C Ratio	0.011	-	-	0.003	-
HCM Control Delay (s)	10.9	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	280	183	87	174	15	197	474	89	8	436	34
Future Volume (veh/h)	24	280	183	87	174	15	197	474	89	8	436	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1900	1900	1767	1841	1841	1885	1796	1796	1411	1841	1841
Adj Flow Rate, veh/h	27	311	203	97	193	17	219	527	99	9	484	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	11	0	0	9	4	4	1	7	7	33	4	4
Cap, veh/h	416	334	218	215	569	50	259	1227	230	86	851	67
Arrive On Green	0.03	0.31	0.31	0.06	0.34	0.34	0.10	0.43	0.43	0.00	0.26	0.26
Sat Flow, veh/h	1654	1073	701	1682	1667	147	1795	2869	537	1344	3286	257
Grp Volume(v), veh/h	27	0	514	97	0	210	219	313	313	9	257	265
Grp Sat Flow(s),veh/h/ln	1654	0	1774	1682	0	1814	1795	1706	1700	1344	1749	1794
Q Serve(g_s), s	0.9	0.0	24.1	3.3	0.0	7.4	6.2	11.0	11.1	0.7	10.9	11.0
Cycle Q Clear(g_c), s	0.9	0.0	24.1	3.3	0.0	7.4	6.2	11.0	11.1	0.7	10.9	11.0
Prop In Lane	1.00		0.39	1.00		0.08	1.00		0.32	1.00		0.14
Lane Grp Cap(c), veh/h	416	0	552	215	0	619	259	730	727	0	453	465
V/C Ratio(X)	0.06	0.00	0.93	0.45	0.00	0.34	0.85	0.43	0.43	0.00	0.57	0.57
Avail Cap(c_a), veh/h	593	0	600	345	0	619	335	730	727	0	714	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	28.6	21.6	0.0	21.1	20.3	17.2	17.2	0.0	27.6	27.6
Incr Delay (d2), s/veh	0.1	0.0	20.5	1.5	0.0	0.3	14.4	0.4	0.4	0.0	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	12.8	1.3	0.0	3.0	3.1	3.9	3.9	0.0	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	49.2	23.1	0.0	21.4	34.7	17.6	17.6	0.0	28.7	28.7
LnGrp LOS	B	A	D	C	A	C	C	B	B	A	C	C
Approach Vol, veh/h		541			307			845			531	
Approach Delay, s/veh		47.6			21.9			22.0			28.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	28.5	7.9	34.8	0.0	43.0	10.5	32.3
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	12.0	* 35	12.0	29.0	* 35	* 35	12.0	29.0
Max Q Clear Time (g_c+I1), s	8.2	13.0	2.9	9.4	0.0	13.1	5.3	26.1
Green Ext Time (p_c), s	0.2	9.2	0.0	0.5	0.0	11.0	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	401	94	41	197	45	95	195	29	84	305	93
Future Volume (veh/h)	97	401	94	41	197	45	95	195	29	84	305	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1811	1885	1885	1781	1841	1841	1870	1856	1856
Adj Flow Rate, veh/h	108	446	104	46	219	50	106	217	32	93	339	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	3	3	6	1	1	8	4	4	2	3	3
Cap, veh/h	436	1134	262	321	728	163	259	675	100	431	384	117
Arrive On Green	0.06	0.40	0.40	0.25	0.25	0.25	0.06	0.43	0.43	0.28	0.28	0.28
Sat Flow, veh/h	1781	2842	658	830	2908	651	1697	1568	231	1131	1366	415
Grp Volume(v), veh/h	108	275	275	46	133	136	106	0	249	93	0	442
Grp Sat Flow(s),veh/h/ln	1781	1763	1737	830	1791	1768	1697	0	1799	1131	0	1781
Q Serve(g_s), s	2.7	7.1	7.2	2.8	3.8	4.0	2.7	0.0	5.8	4.1	0.0	15.2
Cycle Q Clear(g_c), s	2.7	7.1	7.2	2.8	3.8	4.0	2.7	0.0	5.8	4.1	0.0	15.2
Prop In Lane	1.00		0.38	1.00		0.37	1.00		0.13	1.00		0.23
Lane Grp Cap(c), veh/h	436	703	693	321	449	443	259	0	774	431	0	501
V/C Ratio(X)	0.25	0.39	0.40	0.14	0.30	0.31	0.41	0.00	0.32	0.22	0.00	0.88
Avail Cap(c_a), veh/h	768	966	952	568	981	969	577	0	788	608	0	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	13.7	13.7	19.0	19.4	19.4	15.9	0.0	12.0	18.0	0.0	22.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.2	0.4	0.4	0.4	0.0	0.1	0.1	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.5	2.5	0.5	1.5	1.5	0.9	0.0	2.0	1.0	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	14.0	14.1	19.2	19.8	19.8	16.3	0.0	12.1	18.1	0.0	26.9
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	C
Approach Vol, veh/h		658			315			355			535	
Approach Delay, s/veh		14.2			19.7			13.4			25.4	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	30.9	9.5	23.5	9.5	21.4	33.0
Change Period (Y+Rc), s	5.4	* 5.5	* 5.5	5.4	5.4	* 5.5
Max Green Setting (Gmax), s	35.0	* 16	* 28	16.0	35.0	* 28
Max Q Clear Time (g_c+I1), s	9.2	4.7	17.2	4.7	6.0	7.8
Green Ext Time (p_c), s	6.0	0.1	0.8	0.1	2.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	56	8	1	3	28	763	24	5	691	2
Future Vol, veh/h	0	2	56	8	1	3	28	763	24	5	691	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	17	2	2	24	5	2	2	4	2
Mvmt Flow	0	2	62	9	1	3	31	848	27	6	768	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1268	1718	385	1321	1706	438	770	0	0	875	0	0
Stage 1	781	781	-	924	924	-	-	-	-	-	-	-
Stage 2	487	937	-	397	782	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.84	6.54	6.94	4.58	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.67	4.02	3.32	2.44	-	-	2.22	-	-
Pot Cap-1 Maneuver	125	89	605	101	90	567	711	-	-	767	-	-
Stage 1	354	403	-	262	346	-	-	-	-	-	-	-
Stage 2	531	342	-	561	403	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	114	80	605	82	81	567	711	-	-	767	-	-
Mov Cap-2 Maneuver	114	80	-	82	81	-	-	-	-	-	-	-
Stage 1	324	397	-	240	317	-	-	-	-	-	-	-
Stage 2	481	313	-	493	397	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	44.6	0.4	0.1
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	493	104	767	-	-
HCM Lane V/C Ratio	0.044	-	-	0.131	0.128	0.007	-	-
HCM Control Delay (s)	10.3	-	-	13.4	44.6	9.7	-	-
HCM Lane LOS	B	-	-	B	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	9	3	540	387	5
Future Volume (Veh/h)	13	9	3	540	387	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	10	3	600	430	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1039	433	436			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1039	433	436			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	98	100			
cM capacity (veh/h)	246	623	1124			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	24	603	436
Volume Left	14	3	0
Volume Right	10	0	6
cSH	329	1124	1700
Volume to Capacity	0.07	0.00	0.26
Queue Length 95th (ft)	6	0	0
Control Delay (s)	16.8	0.1	0.0
Lane LOS	C	A	
Approach Delay (s)	16.8	0.1	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	417	1	5	469	8	2
Future Vol, veh/h	417	1	5	469	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	463	1	6	521	9	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	464	0	737	232
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1094	-	354	770
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1094	-	351	770
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	742	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	1094	-
HCM Lane V/C Ratio	0.028	-	-	0.005	-
HCM Control Delay (s)	14.4	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	193	169	117	317	25	202	651	69	13	591	28
Future Volume (veh/h)	31	193	169	117	317	25	202	651	69	13	591	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1885	1885	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	34	214	188	130	352	28	224	723	77	14	657	31
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	1	1	2	3	3	2	3	3
Cap, veh/h	261	236	208	244	504	40	262	1534	163	83	1052	50
Arrive On Green	0.04	0.26	0.26	0.07	0.29	0.29	0.10	0.48	0.48	0.00	0.31	0.31
Sat Flow, veh/h	1781	918	807	1781	1723	137	1781	3215	342	1781	3428	162
Grp Volume(v), veh/h	34	0	402	130	0	380	224	396	404	14	338	350
Grp Sat Flow(s),veh/h/ln	1781	0	1725	1781	0	1861	1781	1763	1794	1781	1763	1826
Q Serve(g_s), s	1.2	0.0	20.0	4.7	0.0	16.1	6.8	13.4	13.5	0.8	14.6	14.6
Cycle Q Clear(g_c), s	1.2	0.0	20.0	4.7	0.0	16.1	6.8	13.4	13.5	0.8	14.6	14.6
Prop In Lane	1.00		0.47	1.00		0.07	1.00		0.19	1.00		0.09
Lane Grp Cap(c), veh/h	261	0	444	244	0	545	262	841	856	0	541	560
V/C Ratio(X)	0.13	0.00	0.91	0.53	0.00	0.70	0.86	0.47	0.47	0.00	0.62	0.63
Avail Cap(c_a), veh/h	434	0	564	354	0	609	322	841	856	0	696	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	31.9	24.0	0.0	27.9	21.4	15.6	15.6	0.0	26.3	26.3
Incr Delay (d2), s/veh	0.2	0.0	15.5	1.8	0.0	3.1	16.8	0.4	0.4	0.0	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	9.9	2.0	0.0	7.3	3.5	4.9	4.9	0.0	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	47.4	25.8	0.0	30.9	38.3	16.0	16.0	0.0	27.5	27.5
LnGrp LOS	C	A	D	C	A	C	D	B	B	A	C	C
Approach Vol, veh/h		436			510			1024			702	
Approach Delay, s/veh		45.4			29.6			20.9			27.0	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	33.5	8.5	31.5	0.0	48.6	11.6	28.4
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	12.0	* 35	12.0	29.0	* 35	* 35	12.0	29.0
Max Q Clear Time (g_c+I1), s	8.8	16.6	3.2	18.1	0.0	15.5	6.7	22.0
Green Ext Time (p_c), s	0.2	10.6	0.0	0.9	0.0	12.6	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	287	76	34	349	77	122	376	47	56	267	154
Future Volume (veh/h)	118	287	76	34	349	77	122	376	47	56	267	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1841	1870	1870	1885	1885	1885	1870	1856	1856
Adj Flow Rate, veh/h	131	319	84	38	388	86	136	418	52	62	297	171
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	1	1	4	2	2	1	1	1	2	3	3
Cap, veh/h	345	1093	284	330	676	148	276	744	93	351	330	190
Arrive On Green	0.08	0.39	0.39	0.23	0.23	0.23	0.07	0.45	0.45	0.30	0.30	0.30
Sat Flow, veh/h	1781	2815	730	966	2897	636	1795	1644	205	923	1105	636
Grp Volume(v), veh/h	131	201	202	38	236	238	136	0	470	62	0	468
Grp Sat Flow(s),veh/h/ln	1781	1791	1754	966	1777	1756	1795	0	1848	923	0	1741
Q Serve(g_s), s	3.6	5.3	5.5	2.2	8.1	8.2	3.4	0.0	12.8	3.6	0.0	17.7
Cycle Q Clear(g_c), s	3.6	5.3	5.5	2.2	8.1	8.2	3.4	0.0	12.8	5.8	0.0	17.7
Prop In Lane	1.00		0.42	1.00		0.36	1.00		0.11	1.00		0.37
Lane Grp Cap(c), veh/h	345	696	681	330	414	410	276	0	837	351	0	519
V/C Ratio(X)	0.38	0.29	0.30	0.12	0.57	0.58	0.49	0.00	0.56	0.18	0.00	0.90
Avail Cap(c_a), veh/h	625	914	895	598	906	896	561	0	837	452	0	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	14.5	14.5	21.0	23.3	23.3	16.6	0.0	13.8	19.8	0.0	23.1
Incr Delay (d2), s/veh	0.3	0.2	0.2	0.2	1.2	1.3	0.5	0.0	0.5	0.1	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	1.9	0.5	3.3	3.3	1.3	0.0	4.7	0.7	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	14.7	14.7	21.1	24.5	24.6	17.1	0.0	14.3	19.9	0.0	32.7
LnGrp LOS	B	B	B	C	C	C	B	A	B	B	A	C
Approach Vol, veh/h		534			512			606			530	
Approach Delay, s/veh		15.3			24.3			14.9			31.2	
Approach LOS		B			C			B			C	

Timer - Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		32.1	10.6	26.0	10.7	21.4		36.6
Change Period (Y+Rc), s		5.4	* 5.5	* 5.5	5.4	5.4		* 5.5
Max Green Setting (Gmax), s		35.0	* 16	* 28	16.0	35.0		* 28
Max Q Clear Time (g_c+I1), s		7.5	5.4	19.7	5.6	10.2		14.8
Green Ext Time (p_c), s		4.3	0.1	0.8	0.1	4.9		0.7

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	28	8	3	5	34	921	24	3	868	8
Future Vol, veh/h	7	0	28	8	3	5	34	921	24	3	868	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	2	2	2	7	3	5	33	3	2
Mvmt Flow	8	0	31	9	3	6	38	1023	27	3	964	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1564	2101	487	1601	2092	525	973	0	0	1050	0	0
Stage 1	975	975	-	1113	1113	-	-	-	-	-	-	-
Stage 2	589	1126	-	488	979	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.24	-	-	4.76	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.27	-	-	2.53	-	-
Pot Cap-1 Maneuver	75	51	518	71	52	497	675	-	-	502	-	-
Stage 1	270	328	-	222	282	-	-	-	-	-	-	-
Stage 2	461	278	-	530	326	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	62	44	518	59	44	497	675	-	-	502	-	-
Mov Cap-2 Maneuver	62	44	-	59	44	-	-	-	-	-	-	-
Stage 1	233	324	-	192	244	-	-	-	-	-	-	-
Stage 2	388	240	-	492	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26	67.3	0.4	0
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	675	-	-	210	75	502	-	-
HCM Lane V/C Ratio	0.056	-	-	0.185	0.237	0.007	-	-
HCM Control Delay (s)	10.6	-	-	26	67.3	12.2	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.8	0	-	-

2035 Build-Out Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	12	127	138	1	66	320	552	316	171	895	483
Future Volume (Veh/h)	191	12	127	138	1	66	320	552	316	171	895	483
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	212	13	141	153	1	73	356	613	351	190	994	537
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3216	3318	1262	3290	3412	788	1531			964		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3216	3318	1262	3290	3412	788	1531			964		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	32	0	0	81	18			73		
cM capacity (veh/h)	0	1	207	0	1	391	435			714		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	366	227	1320	1721
Volume Left	212	153	356	190
Volume Right	141	73	351	537
cSH	0	0	435	714
Volume to Capacity	Err	Err	0.82	0.27
Queue Length 95th (ft)	Err	Err	191	27
Control Delay (s)	Err	Err	41.2	11.9
Lane LOS	F	F	E	B
Approach Delay (s)	Err	Err	41.2	11.9
Approach LOS	F	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	156.7%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	552	36	34	384	13	17
Future Vol, veh/h	552	36	34	384	13	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	613	40	38	427	14	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	653	0	923	327
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	930	-	269	669
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	930	-	254	669
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	-	-	930	-
HCM Lane V/C Ratio	0.085	-	-	0.041	-
HCM Control Delay (s)	15	-	-	9	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	390	366	243	454	46	663	566	150	20	603	438
Future Volume (veh/h)	182	390	366	243	454	46	663	566	150	20	603	438
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1900	1900	1767	1841	1841	1885	1796	1796	1411	1841	1841
Adj Flow Rate, veh/h	202	433	407	270	504	51	737	629	167	22	670	487
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	11	0	0	9	4	4	1	7	7	33	4	4
Cap, veh/h	179	261	245	193	487	49	466	1364	362	49	461	333
Arrive On Green	0.08	0.29	0.29	0.09	0.30	0.30	0.23	0.51	0.51	0.00	0.24	0.24
Sat Flow, veh/h	1654	901	847	1682	1644	166	1795	2668	707	1344	1936	1401
Grp Volume(v), veh/h	202	0	840	270	0	555	737	402	394	22	605	552
Grp Sat Flow(s),veh/h/ln	1654	0	1748	1682	0	1811	1795	1706	1669	1344	1749	1589
Q Serve(g_s), s	11.9	0.0	43.4	12.9	0.0	44.4	34.9	22.6	22.7	2.6	35.7	35.7
Cycle Q Clear(g_c), s	11.9	0.0	43.4	12.9	0.0	44.4	34.9	22.6	22.7	2.6	35.7	35.7
Prop In Lane	1.00		0.48	1.00		0.09	1.00		0.42	1.00		0.88
Lane Grp Cap(c), veh/h	179	0	506	193	0	536	466	873	853	0	416	378
V/C Ratio(X)	1.13	0.00	1.66	1.40	0.00	1.04	1.58	0.46	0.46	0.00	1.45	1.46
Avail Cap(c_a), veh/h	179	0	506	193	0	536	466	873	853	0	416	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	53.3	43.6	0.0	52.8	51.8	23.4	23.4	0.0	57.2	57.2
Incr Delay (d2), s/veh	105.4	0.0	306.3	208.7	0.0	48.3	272.2	0.4	0.4	0.0	217.0	221.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	61.9	16.1	0.0	27.1	52.4	8.9	8.7	0.0	40.5	37.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	147.8	0.0	359.6	252.3	0.0	101.1	324.0	23.8	23.8	0.0	274.2	278.5
LnGrp LOS	F	A	F	F	A	F	F	C	C	A	F	F
Approach Vol, veh/h		1042			825			1533			1179	
Approach Delay, s/veh		318.5			150.6			168.1			271.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.0	42.0	17.0	50.0	0.0	83.0	18.0	49.0
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	34.9	* 36	11.9	44.4	* 77	* 77	12.9	43.4
Max Q Clear Time (g_c+I1), s	36.9	37.7	13.9	46.4	0.0	24.7	14.9	45.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	23.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	225.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	401	560	165	197	57	277	365	78	115	740	93
Future Volume (veh/h)	97	401	560	165	197	57	277	365	78	115	740	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1856	1811	1885	1885	1781	1841	1841	1870	1856	1856
Adj Flow Rate, veh/h	108	446	622	183	219	63	308	406	87	128	822	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	3	3	6	1	1	8	4	4	2	3	3
Cap, veh/h	454	788	703	94	1072	301	222	701	150	301	546	68
Arrive On Green	0.02	0.45	0.45	0.39	0.39	0.39	0.10	0.48	0.48	0.34	0.34	0.34
Sat Flow, veh/h	1781	1763	1572	512	2761	775	1697	1469	315	904	1617	203
Grp Volume(v), veh/h	108	446	622	183	140	142	308	0	493	128	0	925
Grp Sat Flow(s),veh/h/ln	1781	1763	1572	512	1791	1746	1697	0	1784	904	0	1819
Q Serve(g_s), s	3.0	26.9	52.0	12.2	7.5	7.8	14.5	0.0	28.7	17.1	0.0	48.5
Cycle Q Clear(g_c), s	3.0	26.9	52.0	55.7	7.5	7.8	14.5	0.0	28.7	25.8	0.0	48.5
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.18	1.00		0.11
Lane Grp Cap(c), veh/h	454	788	703	94	695	678	222	0	851	301	0	615
V/C Ratio(X)	0.24	0.57	0.89	1.96	0.20	0.21	1.39	0.00	0.58	0.43	0.00	1.50
Avail Cap(c_a), veh/h	454	867	773	117	776	756	222	0	851	301	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	29.4	36.3	68.9	29.1	29.2	45.1	0.0	27.1	43.6	0.0	47.5
Incr Delay (d2), s/veh	0.1	0.7	11.2	466.5	0.1	0.2	200.9	0.0	0.7	0.4	0.0	235.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	11.3	21.4	15.6	3.3	3.3	17.1	0.0	12.2	3.8	0.0	61.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	30.1	47.6	535.4	29.3	29.4	246.0	0.0	27.8	44.0	0.0	283.1
LnGrp LOS	C	C	D	F	C	C	F	A	C	D	A	F
Approach Vol, veh/h		1176			465			801			1053	
Approach Delay, s/veh		39.2			228.5			111.7			254.1	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	69.5	20.0	54.0	8.4	61.1	74.0
Change Period (Y+Rc), s	5.4	* 5.5	* 5.5	5.4	5.4	* 5.5
Max Green Setting (Gmax), s	70.6	* 15	* 49	3.0	62.2	* 69
Max Q Clear Time (g_c+I1), s	54.0	16.5	50.5	5.0	9.8	30.7
Green Ext Time (p_c), s	10.2	0.0	0.0	0.0	1.9	0.8

Intersection Summary	
HCM 6th Ctrl Delay	145.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	28.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	153	2	247	8	1	3	494	1229	24	5	865	334
Future Vol, veh/h	153	2	247	8	1	3	494	1229	24	5	865	334
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	17	2	2	24	5	2	2	4	2
Mvmt Flow	170	2	274	9	1	3	549	1366	27	6	961	371

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2941	3650	666	2972	3822	697	1332	0	0	1393	0	0
Stage 1	1159	1159	-	2478	2478	-	-	-	-	-	-	-
Stage 2	1782	2491	-	494	1344	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.84	6.54	6.94	4.58	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.67	4.02	3.32	2.44	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	5	395	~ 5	4	383	~ 411	-	-	487	-	-
Stage 1	208	268	-	24	58	-	-	-	-	-	-	-
Stage 2	~ 85	57	-	488	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	395	-	0	383	~ 411	-	-	487	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	208	253	-	24	0	-	-	-	-	-	-	-
Stage 2	-	0	-	139	207	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			54.8	0.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	~ 411	-	-	-	-	487	-	-
HCM Lane V/C Ratio	1.335	-	-	-	-	0.011	-	-
HCM Control Delay (s)	193.9	-	-	-	-	12.5	-	-
HCM Lane LOS	F	-	-	-	-	B	-	-
HCM 95th %tile Q(veh)	25.4	-	-	-	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	51.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	714	420	538	1017	168	223
Future Vol, veh/h	714	420	538	1017	168	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	793	467	598	1130	187	248

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1260	0	3353	1027
Stage 1	-	-	-	-	1027	-
Stage 2	-	-	-	-	2326	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	~ 552	-	~ 9	285
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	~ 78	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	~ 552	-	0	285
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	31	285.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	285	-	-	~ 552	-
HCM Lane V/C Ratio	1.524	-	-	1.083	-
HCM Control Delay (s)	285.9	-	-	89.6	0
HCM Lane LOS	F	-	-	F	A
HCM 95th %tile Q(veh)	25.2	-	-	18.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	83	62	280	93	404	24	120	110	158	120	37
Future Vol, veh/h	93	83	62	280	93	404	24	120	110	158	120	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	92	69	311	103	449	27	133	122	176	133	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	552	0	0	161	0	0	1370	1507	127	1410	1317	328
Stage 1	-	-	-	-	-	-	333	333	-	950	950	-
Stage 2	-	-	-	-	-	-	1037	1174	-	460	367	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1018	-	-	1418	-	-	124	~ 121	923	~ 116	157	713
Stage 1	-	-	-	-	-	-	681	644	-	312	339	-
Stage 2	-	-	-	-	-	-	279	266	-	581	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1018	-	-	1418	-	-	-	~ 71	923	-	~ 92	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 71	-	-	~ 92	-
Stage 1	-	-	-	-	-	-	605	572	-	277	223	-
Stage 2	-	-	-	-	-	-	70	175	-	343	552	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.5	3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1018	-	-	1418	-	-	-
HCM Lane V/C Ratio	-	0.102	-	-	0.219	-	-	-
HCM Control Delay (s)	-	8.9	0	-	8.3	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	0.8	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	75	255	24	181	623
Future Vol, veh/h	62	75	255	24	181	623
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	83	283	27	201	692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1391	297	0	0	310	0
Stage 1	297	-	-	-	-	-
Stage 2	1094	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	157	742	-	-	1250	-
Stage 1	754	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	742	-	-	1250	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	237	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	53.7	0	1.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	216	1250	-
HCM Lane V/C Ratio	-	-	0.705	0.161	-
HCM Control Delay (s)	-	-	53.7	8.4	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	4.6	0.6	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	26	65	729	1035	65
Future Vol, veh/h	27	26	65	729	1035	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	29	72	810	1150	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1735	611	1222	0	-	0
Stage 1	1186	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	79	437	566	-	-	-
Stage 1	252	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	61	437	566	-	-	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	194	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27	2.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	566	-	222	-	-
HCM Lane V/C Ratio	0.128	-	0.265	-	-
HCM Control Delay (s)	12.3	1.2	27	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.4	-	1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	16	386	395	34	195	208	1024	211	121	636	313
Future Volume (Veh/h)	579	16	386	395	34	195	208	1024	211	121	636	313
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	643	18	429	439	38	217	231	1138	234	134	707	348
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3102	2983	881	3304	3040	1255	1055			1372		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3102	2983	881	3304	3040	1255	1055			1372		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	0	0	0	0	65			73		
cM capacity (veh/h)	0	7	346	0	6	209	660			500		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1090	694	1603	1189
Volume Left	643	439	231	134
Volume Right	429	217	234	348
cSH	0	0	660	500
Volume to Capacity	Err	Err	0.35	0.27
Queue Length 95th (ft)	Err	Err	39	27
Control Delay (s)	Err	Err	13.4	10.9
Lane LOS	F	F	B	B
Approach Delay (s)	Err	Err	13.4	10.9
Approach LOS	F	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	184.4%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	568	22	26	551	46	40
Future Vol, veh/h	568	22	26	551	46	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	631	24	29	612	51	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	655	0	1007	328
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	928	-	237	668
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	928	-	226	668
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	928	-
HCM Lane V/C Ratio	0.293	-	-	0.031	-
HCM Control Delay (s)	20.6	-	-	9	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	521	533	735	220	502	46	510	860	257	51	731	294
Future Volume (veh/h)	521	533	735	220	502	46	510	860	257	51	731	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1885	1885	1870	1856	1856	1870	1856	1856
Adj Flow Rate, veh/h	579	592	817	244	558	51	567	956	286	57	812	327
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	1	1	2	3	3	2	3	3
Cap, veh/h	322	296	409	166	560	51	320	1083	323	49	519	208
Arrive On Green	0.15	0.42	0.42	0.07	0.33	0.33	0.15	0.40	0.40	0.00	0.21	0.21
Sat Flow, veh/h	1781	712	982	1781	1702	156	1781	2677	798	1781	2454	986
Grp Volume(v), veh/h	579	0	1409	244	0	609	567	628	614	57	583	556
Grp Sat Flow(s),veh/h/ln	1781	0	1694	1781	0	1857	1781	1763	1712	1781	1763	1678
Q Serve(g_s), s	22.9	0.0	62.4	9.9	0.0	49.1	22.9	49.4	49.9	5.2	31.7	31.7
Cycle Q Clear(g_c), s	22.9	0.0	62.4	9.9	0.0	49.1	22.9	49.4	49.9	5.2	31.7	31.7
Prop In Lane	1.00		0.58	1.00		0.08	1.00		0.47	1.00		0.59
Lane Grp Cap(c), veh/h	322	0	705	166	0	612	320	713	693	0	373	355
V/C Ratio(X)	1.80	0.00	2.00	1.47	0.00	1.00	1.77	0.88	0.89	0.00	1.56	1.57
Avail Cap(c_a), veh/h	322	0	705	166	0	612	320	713	693	0	373	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	0.0	43.8	46.1	0.0	50.2	51.9	41.3	41.4	0.0	59.2	59.2
Incr Delay (d2), s/veh	372.2	0.0	455.0	242.9	0.0	35.2	359.9	12.3	13.2	0.0	266.7	269.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	40.9	0.0	114.6	14.5	0.0	28.5	43.5	23.2	22.9	0.0	41.4	39.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	422.0	0.0	498.8	289.0	0.0	85.4	411.8	53.6	54.6	0.0	325.8	328.3
LnGrp LOS	F	A	F	F	A	F	F	D	D	A	F	F
Approach Vol, veh/h		1988			853			1809			1196	
Approach Delay, s/veh		476.4			143.6			166.2			311.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	38.0	28.0	55.0	0.0	67.0	15.0	68.0
Change Period (Y+Rc), s	6.1	* 6.3	5.1	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	22.9	* 32	22.9	49.4	* 61	* 61	9.9	62.4
Max Q Clear Time (g_c+I1), s	24.9	33.7	24.9	51.1	0.0	51.9	11.9	64.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	298.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	287	385	116	349	115	688	904	198	77	554	154
Future Volume (veh/h)	118	287	385	116	349	115	688	904	198	77	554	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1885	1841	1870	1870	1885	1885	1885	1870	1856	1856
Adj Flow Rate, veh/h	131	319	428	129	388	128	764	1004	220	86	616	171
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	1	1	4	2	2	1	1	1	2	3	3
Cap, veh/h	181	527	470	82	603	196	498	930	204	56	464	129
Arrive On Green	0.02	0.29	0.29	0.23	0.23	0.23	0.25	0.62	0.62	0.33	0.33	0.33
Sat Flow, veh/h	1781	1791	1598	703	2634	858	1795	1498	328	456	1398	388
Grp Volume(v), veh/h	131	319	428	129	260	256	764	0	1224	86	0	787
Grp Sat Flow(s),veh/h/ln	1781	1791	1598	703	1777	1716	1795	0	1826	456	0	1786
Q Serve(g_s), s	3.0	19.6	33.1	4.6	16.9	17.3	31.5	0.0	79.5	0.0	0.0	42.5
Cycle Q Clear(g_c), s	3.0	19.6	33.1	29.3	16.9	17.3	31.5	0.0	79.5	42.5	0.0	42.5
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	181	527	470	82	406	393	498	0	1133	56	0	592
V/C Ratio(X)	0.72	0.61	0.91	1.58	0.64	0.65	1.54	0.00	1.08	1.53	0.00	1.33
Avail Cap(c_a), veh/h	181	554	494	92	433	418	498	0	1133	56	0	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.8	38.8	43.6	63.3	44.6	44.8	40.6	0.0	24.3	64.1	0.0	42.8
Incr Delay (d2), s/veh	11.8	1.7	20.4	312.0	2.9	3.3	250.8	0.0	51.1	309.7	0.0	159.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	8.7	15.4	9.7	7.7	7.7	49.5	0.0	47.2	6.6	0.0	44.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	40.5	64.0	375.3	47.5	48.1	291.4	0.0	75.4	373.8	0.0	202.0
LnGrp LOS	E	D	E	F	D	D	F	A	F	F	A	F
Approach Vol, veh/h		878			645			1988			873	
Approach Delay, s/veh		55.1			113.3			158.4			218.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	43.1	37.0	48.0	8.4	34.7	85.0
Change Period (Y+Rc), s	5.4	* 5.5	* 5.5	5.4	5.4	* 5.5
Max Green Setting (Gmax), s	39.6	* 32	* 43	3.0	31.2	* 80
Max Q Clear Time (g_c+I1), s	35.1	33.5	44.5	5.0	19.3	81.5
Green Ext Time (p_c), s	2.6	0.0	0.0	0.0	3.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	143.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	16.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	421	0	580	8	3	5	356	1212	24	3	1448	237
Future Vol, veh/h	421	0	580	8	3	5	356	1212	24	3	1448	237
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	2	2	2	7	3	5	33	3	2
Mvmt Flow	468	0	644	9	3	6	396	1347	27	3	1609	263

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3214	3913	936	2964	4031	687	1872	0	0	1374	0	0
Stage 1	1747	1747	-	2153	2153	-	-	-	-	-	-	-
Stage 2	1467	2166	-	811	1878	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	7	7.54	6.54	6.94	4.24	-	-	4.76	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.35	3.52	4.02	3.32	2.27	-	-	2.53	-	-
Pot Cap-1 Maneuver	~ 4	3	~ 261	~ 6	~ 3	389	~ 298	-	-	361	-	-
Stage 1	~ 89	138	-	49	86	-	-	-	-	-	-	-
Stage 2	~ 134	85	-	339	119	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	0	~ 261	-	0	389	~ 298	-	-	361	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 89	138	-	49	0	-	-	-	-	-	-	-
Stage 2	-	0	-	-	119	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			45.4	0
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	~ 298	-	-	-	-	361	-	-
HCM Lane V/C Ratio	1.327	-	-	-	-	0.009	-	-
HCM Control Delay (s)	203.2	-	-	-	-	15.1	-	-
HCM Lane LOS	F	-	-	-	-	C	-	-
HCM 95th %tile Q(veh)	19.7	-	-	-	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	914.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1130	284	361	945	502	659
Future Vol, veh/h	1130	284	361	945	502	659
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1256	316	401	1050	558	732

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1572	0	3266	1414
Stage 1	-	-	-	-	1414	-
Stage 2	-	-	-	-	1852	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	419	-	~ 10	~ 169
Stage 1	-	-	-	-	~ 225	-
Stage 2	-	-	-	-	~ 136	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	419	-	0	~ 169
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	~ 225	-
Stage 2	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	18.1	$ 3035.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	169	-	-	419	-
HCM Lane V/C Ratio	7.633	-	-	0.957	-
HCM Control Delay (s)	$ 3035.5	-	-	65.6	0
HCM Lane LOS	F	-	-	F	A
HCM 95th %tile Q(veh)	143.5	-	-	11.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	109	41	185	86	266	75	275	340	491	275	114
Future Vol, veh/h	62	109	41	185	86	266	75	275	340	491	275	114
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	121	46	206	96	296	83	306	378	546	306	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	392	0	0	167	0	0	1155	1086	144	1280	961	244
Stage 1	-	-	-	-	-	-	282	282	-	656	656	-
Stage 2	-	-	-	-	-	-	873	804	-	624	305	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1167	-	-	1411	-	-	174	~ 216	903	~ 143	~ 256	795
Stage 1	-	-	-	-	-	-	725	678	-	~ 454	462	-
Stage 2	-	-	-	-	-	-	345	396	-	~ 473	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	1411	-	-	-	~ 162	903	-	~ 193	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 162	-	-	~ 193	-
Stage 1	-	-	-	-	-	-	677	633	-	~ 424	372	-
Stage 2	-	-	-	-	-	-	~ 42	319	-	~ 133	618	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	2.8		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1167	-	-	1411	-	-	-
HCM Lane V/C Ratio	-	0.059	-	-	0.146	-	-	-
HCM Control Delay (s)	-	8.3	0	-	8	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	0.5	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	28

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	210	771	75	111	444
Future Vol, veh/h	41	210	771	75	111	444
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	233	857	83	123	493

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1638	899	0	0	940	0
Stage 1	899	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	111	338	-	-	729	-
Stage 1	397	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	85	338	-	-	729	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	179.1	0	2.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	227	729	-
HCM Lane V/C Ratio	-	-	1.229	0.169	-
HCM Control Delay (s)	-	-	179.1	10.9	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	14	0.6	-

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	77	45	1382	998	43
Future Vol, veh/h	79	77	45	1382	998	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	86	50	1536	1109	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2001	579	1157	0	-	0
Stage 1	1133	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 52	458	600	-	-	-
Stage 1	269	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 23	458	600	-	-	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	116	-	-	-	-	-
Stage 2	371	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	194	3.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	600	-	146	-	-
HCM Lane V/C Ratio	0.083	-	1.187	-	-
HCM Control Delay (s)	11.5	3.1	194	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	9.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

2035 Build-Out Improved Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	12	127	138	1	66	320	552	316	171	895	483
Future Volume (vph)	191	12	127	138	1	66	320	552	316	171	895	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1695	1583	1681	1686	1583	1770	3505	1583	1770	3539	1583
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.11	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	1681	1695	1583	1681	1686	1583	201	3505	1583	782	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	212	13	141	153	1	73	356	613	351	190	994	537
RTOR Reduction (vph)	0	0	55	0	0	58	0	0	168	0	0	266
Lane Group Flow (vph)	112	113	86	76	78	15	356	613	183	190	994	271
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	8	8	1	4	4	5	1	6	4	5	2	8
Permitted Phases			8			4	6		6	2		2
Actuated Green, G (s)	12.6	12.6	32.5	9.9	9.9	19.9	56.9	40.9	50.8	41.0	31.0	43.6
Effective Green, g (s)	12.6	12.6	32.5	9.9	9.9	19.9	56.9	40.9	50.8	41.0	31.0	43.6
Actuated g/C Ratio	0.13	0.13	0.33	0.10	0.10	0.20	0.58	0.42	0.52	0.42	0.32	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	219	625	170	171	323	437	1471	923	430	1126	708
v/s Ratio Prot	0.07	c0.07	0.03	0.05	c0.05	0.00	c0.17	0.17	0.02	0.05	c0.28	0.05
v/s Ratio Perm			0.03			0.00	0.31		0.10	0.14		0.12
v/c Ratio	0.52	0.52	0.14	0.45	0.46	0.05	0.81	0.42	0.20	0.44	0.88	0.38
Uniform Delay, d1	39.6	39.6	22.7	41.2	41.2	31.1	25.2	19.9	12.4	18.3	31.5	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.0	0.1	1.9	1.9	0.1	11.1	0.2	0.1	0.7	8.4	0.3
Delay (s)	41.6	41.6	22.8	43.0	43.1	31.2	36.3	20.1	12.5	19.0	39.9	18.3
Level of Service	D	D	C	D	D	C	D	C	B	B	D	B
Approach Delay (s)		34.4			39.3			22.4			30.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	552	36	34	384	13	17
Future Vol, veh/h	552	36	34	384	13	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	613	40	38	427	14	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	653	0	923	327
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	930	-	269	669
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	930	-	254	669
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	-	-	930	-
HCM Lane V/C Ratio	0.085	-	-	0.041	-
HCM Control Delay (s)	15	-	-	9	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	390	366	243	454	46	663	566	150	20	603	438
Future Volume (veh/h)	182	390	366	243	454	46	663	566	150	20	603	438
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1900	1856	1767	1841	1841	1885	1796	1796	1411	1841	1841
Adj Flow Rate, veh/h	202	433	407	270	504	51	737	629	167	22	670	487
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	11	0	3	9	4	4	1	7	7	33	4	4
Cap, veh/h	265	551	1071	341	683	69	816	1452	385	66	897	529
Arrive On Green	0.08	0.15	0.15	0.15	0.21	0.21	0.23	0.54	0.54	0.00	0.26	0.26
Sat Flow, veh/h	3209	3610	2768	1682	3208	324	3483	2668	707	1344	3497	1560
Grp Volume(v), veh/h	202	433	407	270	274	281	737	402	394	22	670	487
Grp Sat Flow(s),veh/h/ln	1605	1805	1384	1682	1749	1782	1742	1706	1669	1344	1749	1560
Q Serve(g_s), s	6.9	12.9	11.8	14.9	16.4	16.5	23.0	15.7	15.8	2.1	19.7	28.7
Cycle Q Clear(g_c), s	6.9	12.9	11.8	14.9	16.4	16.5	23.0	15.7	15.8	2.1	19.7	28.7
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	265	551	1071	341	372	380	816	929	909	0	897	529
V/C Ratio(X)	0.76	0.79	0.38	0.79	0.74	0.74	0.90	0.43	0.43	0.00	0.75	0.92
Avail Cap(c_a), veh/h	459	723	1202	342	372	380	903	972	950	0	897	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	45.6	24.7	33.4	41.1	41.1	41.6	15.2	15.2	0.0	38.2	35.5
Incr Delay (d2), s/veh	4.5	4.3	0.2	11.9	7.4	7.5	11.6	0.3	0.3	0.0	3.5	21.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.0	3.8	7.1	7.7	7.9	10.8	5.6	5.5	0.0	8.5	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	49.9	24.9	45.3	48.5	48.7	53.2	15.5	15.5	0.0	41.7	57.0
LnGrp LOS	D	D	C	D	D	D	D	B	B	A	D	E
Approach Vol, veh/h		1042			825			1533			1179	
Approach Delay, s/veh		41.0			47.5			33.6			47.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.2	35.0	15.2	29.4	0.0	67.2	22.0	22.7
Change Period (Y+Rc), s	6.0	* 6.3	6.0	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	29.0	* 29	16.0	22.4	* 64	* 64	16.9	22.4
Max Q Clear Time (g_c+I1), s	25.0	30.7	8.9	18.5	0.0	17.8	16.9	14.9
Green Ext Time (p_c), s	1.2	0.0	0.4	0.7	0.0	22.0	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	401	560	165	197	57	277	365	78	115	740	93
Future Volume (veh/h)	97	401	560	165	197	57	277	365	78	115	740	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1811	1885	1885	1781	1841	1841	1870	1856	1856
Adj Flow Rate, veh/h	108	446	622	183	219	63	308	406	87	128	822	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	3	2	6	1	1	8	4	4	2	3	3
Cap, veh/h	418	777	541	316	735	206	398	1385	294	347	924	116
Arrive On Green	0.06	0.22	0.22	0.10	0.27	0.27	0.12	0.48	0.48	0.29	0.29	0.29
Sat Flow, veh/h	1781	3526	1585	1725	2761	775	3291	2870	610	904	3152	395
Grp Volume(v), veh/h	108	446	622	183	140	142	308	246	247	128	460	465
Grp Sat Flow(s),veh/h/ln	1781	1763	1585	1725	1791	1746	1646	1749	1731	904	1763	1784
Q Serve(g_s), s	4.0	9.8	19.2	7.0	5.4	5.7	7.9	7.4	7.5	10.2	21.7	21.7
Cycle Q Clear(g_c), s	4.0	9.8	19.2	7.0	5.4	5.7	7.9	7.4	7.5	10.2	21.7	21.7
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.35	1.00		0.22
Lane Grp Cap(c), veh/h	418	777	541	316	477	465	398	844	835	347	516	523
V/C Ratio(X)	0.26	0.57	1.15	0.58	0.29	0.31	0.77	0.29	0.30	0.37	0.89	0.89
Avail Cap(c_a), veh/h	451	777	541	355	485	473	1171	1463	1448	455	726	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	30.3	28.7	23.2	25.5	25.5	37.2	13.6	13.6	25.4	29.5	29.5
Incr Delay (d2), s/veh	0.1	1.0	87.4	1.9	0.3	0.4	1.2	0.1	0.1	0.2	7.9	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.1	23.7	2.9	2.3	2.3	3.2	2.7	2.7	2.1	9.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	31.4	116.2	25.0	25.8	25.9	38.4	13.6	13.7	25.6	37.4	37.3
LnGrp LOS	C	C	F	C	C	C	D	B	B	C	D	D
Approach Vol, veh/h		1176			465			801			1053	
Approach Delay, s/veh		75.5			25.5			23.2			35.9	
Approach LOS		E			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	24.6	16.5	31.0	11.0	28.6		47.6
Change Period (Y+Rc), s	6.0	5.4	6.0	* 5.5	5.4	5.4		* 5.5
Max Green Setting (Gmax), s	11.0	19.2	31.0	* 36	7.2	23.6		* 73
Max Q Clear Time (g_c+I1), s	9.0	21.2	9.9	23.7	6.0	7.7		9.5
Green Ext Time (p_c), s	0.1	0.0	0.6	1.8	0.0	2.4		0.8

Intersection Summary	
HCM 6th Ctrl Delay	44.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	2	247	8	1	3	494	1229	24	5	865	334
Future Volume (veh/h)	153	2	247	8	1	3	494	1229	24	5	865	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1544	1826	1826	1870	1841	1870
Adj Flow Rate, veh/h	170	2	274	9	1	3	549	1366	27	6	961	371
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	5	2	2	2	24	5	5	2	4	2
Cap, veh/h	294	427	695	124	19	25	630	2287	45	216	1327	736
Arrive On Green	0.09	0.23	0.23	0.09	0.09	0.09	0.22	0.66	0.66	0.38	0.38	0.38
Sat Flow, veh/h	3456	1870	1547	767	221	296	2853	3479	69	388	3497	1585
Grp Volume(v), veh/h	170	2	274	13	0	0	549	681	712	6	961	371
Grp Sat Flow(s),veh/h/ln	1728	1870	1547	1284	0	0	1427	1735	1814	388	1749	1585
Q Serve(g_s), s	5.0	0.1	12.4	0.0	0.0	0.0	19.5	23.2	23.3	1.0	24.7	17.2
Cycle Q Clear(g_c), s	5.0	0.1	12.4	0.7	0.0	0.0	19.5	23.2	23.3	1.0	24.7	17.2
Prop In Lane	1.00		1.00	0.69		0.23	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	294	427	695	168	0	0	630	1140	1192	216	1327	736
V/C Ratio(X)	0.58	0.00	0.39	0.08	0.00	0.00	0.87	0.60	0.60	0.03	0.72	0.50
Avail Cap(c_a), veh/h	362	464	725	168	0	0	871	1356	1418	231	1467	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	31.3	19.3	44.1	0.0	0.0	39.4	10.1	10.1	20.5	27.8	19.6
Incr Delay (d2), s/veh	1.8	0.0	0.4	0.2	0.0	0.0	7.3	0.5	0.5	0.1	1.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	4.5	0.3	0.0	0.0	7.1	7.3	7.7	0.1	9.9	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	31.3	19.7	44.3	0.0	0.0	46.7	10.6	10.6	20.6	29.5	20.2
LnGrp LOS	D	C	B	D	A	A	D	B	B	C	C	C
Approach Vol, veh/h		446			13			1942			1338	
Approach Delay, s/veh		30.5			44.3			20.8			26.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	39.1	45.8	14.9	15.0		74.9		29.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Green Setting (Gmax), s	32.0	44.0	11.0	9.0		82.0		26.0
Max Q Clear Time (g_c+I1), s	21.5	26.7	7.0	2.7		25.3		14.4
Green Ext Time (p_c), s	1.7	13.1	0.2	0.0		41.6		0.8

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	714	420	538	1017	168	223
Future Volume (veh/h)	714	420	538	1017	168	223
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	793	467	598	1130	187	248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1085	633	755	2782	322	869
Arrive On Green	0.50	0.50	0.22	0.78	0.09	0.09
Sat Flow, veh/h	2253	1261	3456	3647	3456	2790
Grp Volume(v), veh/h	651	609	598	1130	187	248
Grp Sat Flow(s),veh/h/ln	1777	1643	1728	1777	1728	1395
Q Serve(g_s), s	27.8	28.3	15.8	9.8	5.0	6.5
Cycle Q Clear(g_c), s	27.8	28.3	15.8	9.8	5.0	6.5
Prop In Lane		0.77	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	892	825	755	2782	322	869
V/C Ratio(X)	0.73	0.74	0.79	0.41	0.58	0.29
Avail Cap(c_a), veh/h	1103	1020	1108	3565	393	927
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	19.0	35.7	3.3	42.0	25.1
Incr Delay (d2), s/veh	1.9	2.2	2.5	0.1	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	10.4	6.7	2.3	2.2	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	21.2	38.2	3.4	43.7	25.3
LnGrp LOS	C	C	D	A	D	C
Approach Vol, veh/h	1260			1728	435	
Approach Delay, s/veh	21.0			15.5	33.2	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	27.1	54.6			81.7	15.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	21.0	60.0			97.0	11.0
Max Q Clear Time (g_c+I1), s	17.8	30.3			11.8	8.5
Green Ext Time (p_c), s	3.3	18.2			24.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	83	62	280	93	404	24	120	110	158	120	37
Future Volume (veh/h)	93	83	62	280	93	404	24	120	110	158	120	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	92	69	311	103	449	27	133	122	176	133	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	380	285	496	716	806	384	432	366	522	608	188
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.23	0.23	0.23	0.13	0.44	0.44
Sat Flow, veh/h	856	992	744	1225	1870	1585	1211	1870	1585	1781	1371	423
Grp Volume(v), veh/h	103	0	161	311	103	449	27	133	122	176	0	174
Grp Sat Flow(s),veh/h/ln	856	0	1736	1225	1870	1585	1211	1870	1585	1781	0	1794
Q Serve(g_s), s	6.2	0.0	4.4	16.0	2.5	13.4	1.2	4.1	4.4	4.7	0.0	4.1
Cycle Q Clear(g_c), s	8.7	0.0	4.4	20.4	2.5	13.4	1.2	4.1	4.4	4.7	0.0	4.1
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	401	0	665	496	716	806	384	432	366	522	0	796
V/C Ratio(X)	0.26	0.00	0.24	0.63	0.14	0.56	0.07	0.31	0.33	0.34	0.00	0.22
Avail Cap(c_a), veh/h	741	0	1355	983	1460	1436	611	784	664	787	0	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	14.5	21.4	13.9	11.7	20.9	22.0	22.2	14.8	0.0	11.9
Incr Delay (d2), s/veh	0.3	0.0	0.2	1.3	0.1	0.6	0.1	0.4	0.5	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.7	4.5	1.0	4.4	0.3	1.8	1.7	1.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	14.7	22.7	14.0	12.3	21.0	22.4	22.7	15.2	0.0	12.0
LnGrp LOS	B	A	B	C	B	B	C	C	C	B	A	B
Approach Vol, veh/h		264			863			282			350	
Approach Delay, s/veh		15.6			16.2			22.4			13.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	32.5	36.7	32.5	14.7	22.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	54.0	54.0	54.0	19.0	29.0
Max Q Clear Time (g_c+I1), s	10.7	6.1	22.4	6.7	6.4
Green Ext Time (p_c), s	1.7	0.6	4.1	0.4	0.9

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	75	255	24	181	623
Future Vol, veh/h	62	75	255	24	181	623
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	83	283	27	201	692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1391	297	0	0	310	0
Stage 1	297	-	-	-	-	-
Stage 2	1094	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	157	742	-	-	1250	-
Stage 1	754	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	742	-	-	1250	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	237	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.1	0	1.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	116	742	1250	-
HCM Lane V/C Ratio	-	-	0.594	0.112	0.161	-
HCM Control Delay (s)	-	-	73.7	10.5	8.4	0
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	2.9	0.4	0.6	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	26	65	729	1035	65
Future Vol, veh/h	27	26	65	729	1035	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	29	72	810	1150	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1735	611	1222	0	-	0
Stage 1	1186	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	79	437	566	-	-	-
Stage 1	252	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	69	437	566	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	220	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	566	-	167	437	-	-
HCM Lane V/C Ratio	0.128	-	0.18	0.066	-	-
HCM Control Delay (s)	12.3	-	31.2	13.8	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.6	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	16	386	395	34	195	208	1024	211	121	636	313
Future Volume (vph)	579	16	386	395	34	195	208	1024	211	121	636	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1690	1583	1681	1698	1583	1770	3574	1583	1770	3505	1583
Flt Permitted	0.95	0.95	1.00	0.95	0.96	1.00	0.18	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1681	1690	1583	1681	1698	1583	339	3574	1583	222	3505	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	643	18	429	439	38	217	231	1138	234	134	707	348
RTOR Reduction (vph)	0	0	54	0	0	103	0	0	93	0	0	172
Lane Group Flow (vph)	328	333	375	237	240	114	231	1138	141	134	707	176
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	1%	2%	2%	3%	2%
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	8	8	1	4	4	5	1	6	4	5	2	8
Permitted Phases			8			4	6		6	2		2
Actuated Green, G (s)	24.8	24.8	38.8	18.9	18.9	28.0	52.5	38.5	57.4	42.7	33.6	58.4
Effective Green, g (s)	24.8	24.8	38.8	18.9	18.9	28.0	52.5	38.5	57.4	42.7	33.6	58.4
Actuated g/C Ratio	0.22	0.22	0.34	0.16	0.16	0.24	0.46	0.33	0.50	0.37	0.29	0.51
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	361	363	615	275	278	384	328	1193	870	204	1021	801
v/s Ratio Prot	0.20	c0.20	c0.07	0.14	c0.14	0.02	0.09	c0.32	0.03	0.05	0.20	0.05
v/s Ratio Perm			0.16			0.05	0.23		0.06	0.19		0.06
v/c Ratio	0.91	0.92	0.61	0.86	0.86	0.30	0.70	0.95	0.16	0.66	0.69	0.22
Uniform Delay, d1	44.1	44.2	31.9	46.9	46.9	35.6	22.3	37.5	15.8	28.4	36.3	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.6	27.2	1.7	23.1	23.1	0.4	6.7	16.1	0.1	7.4	2.0	0.1
Delay (s)	69.8	71.5	33.6	70.0	70.0	36.1	29.0	53.7	15.9	35.8	38.3	15.9
Level of Service	E	E	C	E	E	D	C	D	B	D	D	B
Approach Delay (s)		56.1			59.4			44.6			31.5	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	568	22	26	551	46	40
Future Vol, veh/h	568	22	26	551	46	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	631	24	29	612	51	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	655	0	1007	328
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	928	-	237	668
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	928	-	226	668
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	928	-
HCM Lane V/C Ratio	0.293	-	-	0.031	-
HCM Control Delay (s)	20.6	-	-	9	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	521	533	735	220	502	46	510	860	257	51	731	294
Future Volume (veh/h)	521	533	735	220	502	46	510	860	257	51	731	294
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1885	1885	1870	1856	1856	1870	1856	1826
Adj Flow Rate, veh/h	579	592	817	244	558	51	567	956	286	57	812	327
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	5	2	1	1	2	3	3	2	3	5
Cap, veh/h	635	847	1150	308	553	50	636	1327	395	63	917	687
Arrive On Green	0.18	0.24	0.24	0.12	0.17	0.17	0.18	0.50	0.50	0.00	0.26	0.26
Sat Flow, veh/h	3456	3554	2723	1781	3319	303	3456	2677	798	1781	3526	1547
Grp Volume(v), veh/h	579	592	817	244	301	308	567	628	614	57	812	327
Grp Sat Flow(s),veh/h/ln	1728	1777	1362	1781	1791	1831	1728	1763	1712	1781	1763	1547
Q Serve(g_s), s	19.1	17.7	27.7	11.9	19.4	19.4	18.6	32.5	32.8	4.2	25.8	17.3
Cycle Q Clear(g_c), s	19.1	17.7	27.7	11.9	19.4	19.4	18.6	32.5	32.8	4.2	25.8	17.3
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	635	847	1150	308	299	305	636	874	849	0	917	687
V/C Ratio(X)	0.91	0.70	0.71	0.79	1.01	1.01	0.89	0.72	0.72	0.00	0.89	0.48
Avail Cap(c_a), veh/h	653	847	1150	323	299	305	713	920	893	0	930	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	40.5	27.7	30.4	48.5	48.5	46.3	23.0	23.1	0.0	41.4	22.8
Incr Delay (d2), s/veh	17.0	2.6	2.1	12.2	53.7	54.2	12.6	2.6	2.8	0.0	10.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	7.9	9.4	6.0	13.0	13.3	8.8	13.1	12.8	0.0	12.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	43.0	29.8	42.6	102.2	102.7	58.9	25.6	25.8	0.0	51.5	23.3
LnGrp LOS	E	D	C	D	F	F	E	C	C	A	D	C
Approach Vol, veh/h		1988			853			1809			1196	
Approach Delay, s/veh		43.6			85.3			36.1			41.3	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	36.6	27.4	25.0	0.0	64.0	19.0	33.3
Change Period (Y+Rc), s	6.0	* 6.3	6.0	5.6	* 6.3	* 6.3	5.1	5.6
Max Green Setting (Gmax), s	24.0	* 31	22.0	19.4	* 61	* 61	14.9	27.4
Max Q Clear Time (g_c+I1), s	20.6	27.8	21.1	21.4	0.0	34.8	13.9	29.7
Green Ext Time (p_c), s	0.8	2.5	0.2	0.0	0.0	21.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	287	385	116	349	115	688	904	198	77	554	154
Future Volume (veh/h)	118	287	385	116	349	115	688	904	198	77	554	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1841	1870	1870	1885	1885	1885	1870	1856	1856
Adj Flow Rate, veh/h	131	319	428	129	388	128	764	1004	220	86	616	171
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	1	2	4	2	2	1	1	1	2	3	3
Cap, veh/h	274	732	706	303	576	188	840	1614	353	184	694	192
Arrive On Green	0.07	0.20	0.20	0.08	0.22	0.22	0.24	0.55	0.55	0.25	0.25	0.25
Sat Flow, veh/h	1781	3582	1585	1753	2634	858	3483	2922	639	456	2727	756
Grp Volume(v), veh/h	131	319	428	129	260	256	764	614	610	86	398	389
Grp Sat Flow(s),veh/h/ln	1781	1791	1585	1753	1777	1716	1742	1791	1770	456	1763	1720
Q Serve(g_s), s	6.0	8.2	21.6	6.0	14.2	14.5	22.5	24.7	24.8	18.3	23.0	23.0
Cycle Q Clear(g_c), s	6.0	8.2	21.6	6.0	14.2	14.5	22.5	24.7	24.8	18.3	23.0	23.0
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.36	1.00		0.44
Lane Grp Cap(c), veh/h	274	732	706	303	389	375	840	989	978	184	448	437
V/C Ratio(X)	0.48	0.44	0.61	0.43	0.67	0.68	0.91	0.62	0.62	0.47	0.89	0.89
Avail Cap(c_a), veh/h	286	732	706	323	397	383	956	1212	1198	226	609	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	36.7	22.2	29.3	37.8	37.9	39.0	16.1	16.2	36.2	37.9	37.9
Incr Delay (d2), s/veh	0.5	0.4	1.5	0.9	4.2	4.8	10.8	0.3	0.3	0.7	9.6	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.5	8.0	2.6	6.5	6.5	10.6	9.4	9.4	2.0	10.7	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	37.1	23.7	30.3	41.9	42.6	49.8	16.4	16.4	36.9	47.5	48.0
LnGrp LOS	C	D	C	C	D	D	D	B	B	D	D	D
Approach Vol, veh/h		878			645			1988			873	
Approach Delay, s/veh		29.7			39.9			29.2			46.7	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	14.8	27.0	31.5	32.4	13.3	28.5		63.8
Change Period (Y+Rc), s	6.0	5.4	6.0	* 5.5	5.4	5.4		* 5.5
Max Green Setting (Gmax), s	10.0	21.6	29.0	* 37	8.6	23.6		* 72
Max Q Clear Time (g_c+I1), s	8.0	23.6	24.5	25.0	8.0	16.5		26.8
Green Ext Time (p_c), s	0.1	0.0	0.9	1.8	0.0	2.8		2.3

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	421	0	580	8	3	5	356	1212	24	3	1448	237
Future Volume (veh/h)	421	0	580	8	3	5	356	1212	24	3	1448	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1796	1856	1856	1411	1856	1870
Adj Flow Rate, veh/h	468	0	644	9	3	6	396	1347	27	3	1609	263
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	5	2	2	2	7	3	3	33	3	2
Cap, veh/h	464	487	612	77	29	31	450	2259	45	185	1598	931
Arrive On Green	0.13	0.00	0.26	0.08	0.08	0.08	0.14	0.64	0.64	0.45	0.45	0.45
Sat Flow, veh/h	3456	1870	1547	421	390	406	3319	3535	71	298	3526	1585
Grp Volume(v), veh/h	468	0	644	18	0	0	396	671	703	3	1609	263
Grp Sat Flow(s),veh/h/ln	1728	1870	1547	1217	0	0	1659	1763	1843	298	1763	1585
Q Serve(g_s), s	16.0	0.0	31.0	0.0	0.0	0.0	14.0	26.5	26.5	0.7	54.0	9.8
Cycle Q Clear(g_c), s	16.0	0.0	31.0	1.1	0.0	0.0	14.0	26.5	26.5	5.1	54.0	9.8
Prop In Lane	1.00		1.00	0.50		0.33	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	464	487	612	137	0	0	450	1127	1178	185	1598	931
V/C Ratio(X)	1.01	0.00	1.05	0.13	0.00	0.00	0.88	0.60	0.60	0.02	1.01	0.28
Avail Cap(c_a), veh/h	464	487	612	137	0	0	474	1139	1191	185	1598	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	36.0	51.4	0.0	0.0	50.6	12.5	12.5	20.5	32.6	12.1
Incr Delay (d2), s/veh	43.9	0.0	50.8	0.4	0.0	0.0	16.8	0.8	0.8	0.0	24.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	26.2	0.5	0.0	0.0	6.7	9.3	9.8	0.0	26.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.5	0.0	86.8	51.9	0.0	0.0	67.3	13.4	13.3	20.5	56.8	12.3
LnGrp LOS	F	A	F	D	A	A	E	B	B	C	F	B
Approach Vol, veh/h		1112			18			1770			1875	
Approach Delay, s/veh		90.4			51.9			25.4			50.5	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	32.1	60.0	22.0	15.0		82.1		37.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Green Setting (Gmax), s	17.0	54.0	16.0	9.0		77.0		31.0
Max Q Clear Time (g_c+I1), s	16.0	56.0	18.0	3.1		28.5		33.0
Green Ext Time (p_c), s	0.2	0.0	0.0	0.0		36.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1130	284	361	945	502	659
Future Volume (veh/h)	1130	284	361	945	502	659
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1256	316	401	1050	558	732
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1454	360	461	2488	681	922
Arrive On Green	0.52	0.52	0.13	0.70	0.20	0.20
Sat Flow, veh/h	2916	699	3456	3647	3456	2790
Grp Volume(v), veh/h	783	789	401	1050	558	732
Grp Sat Flow(s),veh/h/ln	1777	1745	1728	1777	1728	1395
Q Serve(g_s), s	44.6	46.7	13.3	14.7	18.0	23.0
Cycle Q Clear(g_c), s	44.6	46.7	13.3	14.7	18.0	23.0
Prop In Lane		0.40	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	915	899	461	2488	681	922
V/C Ratio(X)	0.86	0.88	0.87	0.42	0.82	0.79
Avail Cap(c_a), veh/h	944	927	503	2588	681	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	25.0	49.6	7.4	44.9	35.5
Incr Delay (d2), s/veh	7.6	9.4	14.2	0.1	7.8	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.6	20.5	6.6	5.0	8.5	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.1	34.4	63.8	7.6	52.7	40.3
LnGrp LOS	C	C	E	A	D	D
Approach Vol, veh/h	1572			1451	1290	
Approach Delay, s/veh	33.3			23.1	45.7	
Approach LOS	C			C	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	31.6	66.1			87.7	29.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	17.0	62.0			85.0	23.0
Max Q Clear Time (g_c+I1), s	15.3	48.7			16.7	25.0
Green Ext Time (p_c), s	0.3	11.4			20.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	109	41	185	86	266	75	275	340	491	275	114
Future Volume (veh/h)	62	109	41	185	86	266	75	275	340	491	275	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	121	46	206	96	296	83	306	378	546	306	127
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	364	138	333	527	840	338	504	427	618	734	304
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.25	0.58	0.58
Sat Flow, veh/h	992	1291	491	1218	1870	1585	955	1870	1585	1781	1255	521
Grp Volume(v), veh/h	69	0	167	206	96	296	83	306	378	546	0	433
Grp Sat Flow(s),veh/h/ln	992	0	1782	1218	1870	1585	955	1870	1585	1781	0	1777
Q Serve(g_s), s	5.1	0.0	6.7	14.5	3.5	9.7	6.2	12.8	20.5	18.2	0.0	12.0
Cycle Q Clear(g_c), s	8.6	0.0	6.7	21.1	3.5	9.7	6.2	12.8	20.5	18.2	0.0	12.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	321	0	502	333	527	840	338	504	427	618	0	1038
V/C Ratio(X)	0.21	0.00	0.33	0.62	0.18	0.35	0.25	0.61	0.89	0.88	0.00	0.42
Avail Cap(c_a), veh/h	440	0	715	479	751	1029	378	584	495	931	0	1426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	25.5	33.9	24.4	12.2	26.2	28.6	31.4	16.5	0.0	10.2
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.9	0.2	0.3	0.4	1.4	15.7	6.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.9	4.4	1.6	3.3	1.4	5.9	9.6	8.1	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	25.9	35.7	24.5	12.4	26.6	30.0	47.2	23.4	0.0	10.5
LnGrp LOS	C	A	C	D	C	B	C	C	D	C	A	B
Approach Vol, veh/h		236			598			767			979	
Approach Delay, s/veh		26.5			22.4			38.1			17.7	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	31.3	58.4	31.3	28.2	30.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	36.0	72.0	36.0	38.0	28.0
Max Q Clear Time (g_c+I1), s	10.6	14.0	23.1	20.2	22.5
Green Ext Time (p_c), s	1.3	1.7	2.2	2.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	210	771	75	111	444
Future Vol, veh/h	41	210	771	75	111	444
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	233	857	83	123	493

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1638	899	0	0	940	0
Stage 1	899	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	111	338	-	-	729	-
Stage 1	397	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	85	338	-	-	729	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.8	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	85	338	729	-
HCM Lane V/C Ratio	-	-	0.536	0.69	0.169	-
HCM Control Delay (s)	-	-	88.3	36.3	10.9	0
HCM Lane LOS	-	-	F	E	B	A
HCM 95th %tile Q(veh)	-	-	2.3	4.9	0.6	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	77	45	1382	998	43
Future Vol, veh/h	79	77	45	1382	998	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	86	50	1536	1109	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2001	579	1157	0	-	0
Stage 1	1133	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 52	458	600	-	-	-
Stage 1	269	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 48	458	600	-	-	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	247	-	-	-	-	-
Stage 2	371	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.8	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	600	-	156	458	-	-
HCM Lane V/C Ratio	0.083	-	0.563	0.187	-	-
HCM Control Delay (s)	11.5	-	54.3	14.7	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	2.9	0.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix F
Queuing and Blocking Reports

2021 Existing Conditions

Intersection: 1: Old Buncombe Road & Brooks Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	64	55
Average Queue (ft)	10	4
95th Queue (ft)	41	26
Link Distance (ft)	518	2582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	19	25
Average Queue (ft)	1	4
95th Queue (ft)	9	20
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	80	376	99	141	147	176	197	39	160	172
Average Queue (ft)	10	152	35	52	61	64	83	3	74	83
95th Queue (ft)	52	305	76	110	120	131	156	20	134	146
Link Distance (ft)		2582	849	849		1744	1744		2831	2831
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	125				125			150		
Storage Blk Time (%)		15			1	1			1	
Queuing Penalty (veh)		3			3	1			0	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	85	119	126	65	74	79	111	147	92	263
Average Queue (ft)	32	56	51	16	25	26	38	65	39	120
95th Queue (ft)	67	100	102	46	56	60	78	123	77	205
Link Distance (ft)		1834	1834		2210	2210		2343		1179
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)										0
Queuing Penalty (veh)										0

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	75	54	108	41	37	3
Average Queue (ft)	30	11	12	1	2	0
95th Queue (ft)	60	39	56	26	16	4
Link Distance (ft)	2943	1183	1294	1294	1744	1744
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 8

Intersection: 1: Old Buncombe Road & Brooks Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	45	17
Average Queue (ft)	13	1
95th Queue (ft)	39	8
Link Distance (ft)	518	2582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	16	35
Average Queue (ft)	1	7
95th Queue (ft)	10	28
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	143	320	113	247	176	194	219	17	214	224
Average Queue (ft)	16	121	42	101	67	81	101	3	100	108
95th Queue (ft)	69	246	88	191	132	153	174	13	173	187
Link Distance (ft)		2582	849	849		1744	1744		2831	2831
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	125				125			150		
Storage Blk Time (%)		10			2	2			3	
Queuing Penalty (veh)		3			6	4			0	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	121	103	106	50	133	142	106	245	113	318
Average Queue (ft)	44	44	36	15	51	61	45	117	33	143
95th Queue (ft)	89	85	78	39	102	122	85	210	91	265
Link Distance (ft)		1834	1834		2210	2210		2343		1179
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)								0		1
Queuing Penalty (veh)								0		1

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	64	45	103	12	28	2
Average Queue (ft)	21	14	16	0	2	0
95th Queue (ft)	51	41	64	12	13	2
Link Distance (ft)	2943	1183	1294	1294	1744	1744
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 14

2035 No Build Conditions

Intersection: 1: Old Buncombe Road & Brooks Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	76	60
Average Queue (ft)	17	5
95th Queue (ft)	55	30
Link Distance (ft)	518	2582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	18	27
Average Queue (ft)	1	5
95th Queue (ft)	9	22
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	164	405	112	174	194	193	205	39	184	197
Average Queue (ft)	18	190	43	64	74	80	104	5	97	102
95th Queue (ft)	88	355	90	131	143	148	173	23	163	172
Link Distance (ft)		2582	849	849		1744	1744		2831	2831
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	125				125			150		
Storage Blk Time (%)		23			3	1			2	
Queuing Penalty (veh)		6			7	3			0	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	94	134	133	78	75	105	94	160	158	305
Average Queue (ft)	39	66	60	24	29	34	41	68	45	147
95th Queue (ft)	77	112	111	59	60	79	77	127	105	247
Link Distance (ft)		1834	1834		2210	2210		2343		1179
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)										1
Queuing Penalty (veh)										1

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	71	51	119	29	32	9
Average Queue (ft)	33	12	19	1	3	0
95th Queue (ft)	58	39	74	25	17	7
Link Distance (ft)	2943	1183	1294	1294	1744	1744
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 16

Intersection: 1: Old Buncombe Road & Brooks Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	50	29
Average Queue (ft)	16	1
95th Queue (ft)	45	19
Link Distance (ft)	518	2582
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	25	27
Average Queue (ft)	2	7
95th Queue (ft)	13	27
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	145	335	122	218	186	218	245	30	255	269
Average Queue (ft)	23	161	52	109	83	105	128	5	128	137
95th Queue (ft)	97	299	99	186	151	182	210	20	213	227
Link Distance (ft)		2582	849	849		1744	1744		2831	2831
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	125				125			150		
Storage Blk Time (%)		19			3	4			6	
Queuing Penalty (veh)		6			11	8			1	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	115	116	116	61	139	164	107	265	86	318
Average Queue (ft)	51	57	49	19	67	79	48	132	34	164
95th Queue (ft)	95	102	95	49	120	140	86	226	71	282
Link Distance (ft)		1834	1834		2210	2210		2343		1179
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)								0		2
Queuing Penalty (veh)								0		1

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	76	47	125	10	43	10
Average Queue (ft)	26	14	28	0	3	0
95th Queue (ft)	60	41	87	0	21	11
Link Distance (ft)	2943	1183	1294	1294	1744	1744
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 27

2035 Build-Out Conditions

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	533	578	1789	2224
Average Queue (ft)	465	541	1381	977
95th Queue (ft)	738	638	2198	2363
Link Distance (ft)	526	544	1776	2348
Upstream Blk Time (%)	80	97	27	15
Queuing Penalty (veh)	264	0	325	224
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: School Road & North Franklin Road

Movement	EB	WB	WB	NB
Directions Served	TR	LT	T	LR
Maximum Queue (ft)	11	1709	1685	208
Average Queue (ft)	0	382	362	51
95th Queue (ft)	7	1371	1341	182
Link Distance (ft)	2210	2584	2584	1110
Upstream Blk Time (%)		1	0	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	B11	B11	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	T	T	L	T	TR	L	T	TR
Maximum Queue (ft)	224	473	940	955	1585	1588	250	1766	1779	249	618	614
Average Queue (ft)	81	216	770	880	1019	1034	247	1493	1034	34	489	587
95th Queue (ft)	204	419	1206	1085	2058	2054	261	2213	2199	169	793	620
Link Distance (ft)		754	849	849	1552	1552		1742	1742		581	581
Upstream Blk Time (%)		0	51	84	43	43		42	10		29	69
Queuing Penalty (veh)		0	0	0	0	0		298	71		154	365
Storage Bay Dist (ft)	125						125			150		
Storage Blk Time (%)	2	27					94	2			61	
Queuing Penalty (veh)	12	50					266	15			12	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	134	1145	1239	360	2226	2227	194	211	360	1228
Average Queue (ft)	44	387	513	352	1733	1144	64	57	168	1040
95th Queue (ft)	104	1199	1280	367	2670	2805	148	157	432	1489
Link Distance (ft)		1834	1834		2210	2210		2348		1179
Upstream Blk Time (%)		6	7		41	36				49
Queuing Penalty (veh)		0	0		84	73				0
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)		1		100	0		0	0		62
Queuing Penalty (veh)		1		98	0		0	1		71

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	951	148	1353	1352	32	58
Average Queue (ft)	942	59	1319	1313	2	9
95th Queue (ft)	947	161	1373	1374	17	34
Link Distance (ft)	941	1183	1295	1295	1742	1742
Upstream Blk Time (%)	98		92	65		
Queuing Penalty (veh)	342		0	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Driveway #2 & Old Buncombe Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	48	774	573
Average Queue (ft)	10	742	561
95th Queue (ft)	34	862	575
Link Distance (ft)	1776	754	565
Upstream Blk Time (%)		34	100
Queuing Penalty (veh)		535	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Driveway #4/Driveway #3 & Brooks Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	1913	42	583	569
Average Queue (ft)	1295	5	554	553
95th Queue (ft)	2243	26	649	601
Link Distance (ft)	1941	941	565	557
Upstream Blk Time (%)	23		94	96
Queuing Penalty (veh)	48		0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Driveway #5 & Brooks Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1062	632	437
Average Queue (ft)	564	598	121
95th Queue (ft)	1206	669	477
Link Distance (ft)	1941	602	526
Upstream Blk Time (%)		95	19
Queuing Penalty (veh)		0	152
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: SC 253 & Driveway #6

Movement	EB	NB	NB	SB	SB
Directions Served	LR	LT	T	T	TR
Maximum Queue (ft)	553	82	30	2257	2258
Average Queue (ft)	317	13	1	1474	1486
95th Queue (ft)	632	52	18	2782	2770
Link Distance (ft)	557	581	581	2228	2228
Upstream Blk Time (%)	22			38	38
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 3460

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	537	576	1401	1912
Average Queue (ft)	516	553	487	519
95th Queue (ft)	632	573	1235	1502
Link Distance (ft)	526	544	1776	2348
Upstream Blk Time (%)	88	100	4	3
Queuing Penalty (veh)	864	0	51	31
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	55	80
Average Queue (ft)	7	36
95th Queue (ft)	33	64
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	WB	WB	B11	B11	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	T	T	L	T	TR	L	T	TR
Maximum Queue (ft)	225	512	663	807	199	207	250	1756	1744	250	611	614
Average Queue (ft)	125	219	221	509	14	20	246	1126	922	84	586	590
95th Queue (ft)	236	439	618	884	146	167	277	1931	1841	256	601	605
Link Distance (ft)		754	849	849	1552	1552		1742	1742		581	581
Upstream Blk Time (%)		0	3	9				6	4		59	61
Queuing Penalty (veh)		0	0	0				50	28		317	331
Storage Bay Dist (ft)	125						125			150		
Storage Blk Time (%)	10	22					86	23		0	78	
Queuing Penalty (veh)	131	115					369	116		0	40	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	176	409	508	360	1460	1252	248	258	342	1091
Average Queue (ft)	76	127	198	327	729	248	106	93	133	664
95th Queue (ft)	145	305	393	450	1467	769	206	206	375	1256
Link Distance (ft)		1834	1834		2210	2210		2348		1179
Upstream Blk Time (%)					0	0				13
Queuing Penalty (veh)					0	0				0
Storage Bay Dist (ft)	275			260			250		260	
Storage Blk Time (%)		0		87	0		0	0		45
Queuing Penalty (veh)		0		152	0		5	1		35

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	946	248	1301	1283	30	51
Average Queue (ft)	941	135	873	822	2	10
95th Queue (ft)	945	275	1546	1529	16	35
Link Distance (ft)	941	1183	1295	1295	1742	1742
Upstream Blk Time (%)	99		28	17		
Queuing Penalty (veh)	934		0	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Driveway #2 & Old Buncombe Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	44	756	602
Average Queue (ft)	6	351	574
95th Queue (ft)	27	714	593
Link Distance (ft)	1776	754	565
Upstream Blk Time (%)		3	100
Queuing Penalty (veh)		38	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Driveway #4/Driveway #3 & Brooks Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	1920	28	564	559
Average Queue (ft)	1258	2	562	556
95th Queue (ft)	2122	13	575	567
Link Distance (ft)	1941	941	565	557
Upstream Blk Time (%)	12		100	100
Queuing Penalty (veh)	22		0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Driveway #5 & Brooks Avenue

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1346	634	431
Average Queue (ft)	796	607	58
95th Queue (ft)	1474	626	314
Link Distance (ft)	1941	602	526
Upstream Blk Time (%)		100	8
Queuing Penalty (veh)		0	41
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: SC 253 & Driveway #6

Movement	EB	NB	NB	SB	SB
Directions Served	LR	LT	T	T	TR
Maximum Queue (ft)	577	130	95	2211	2204
Average Queue (ft)	499	19	6	1159	1161
95th Queue (ft)	709	76	46	2373	2355
Link Distance (ft)	557	581	581	2228	2228
Upstream Blk Time (%)	77			15	14
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 3671

2035 Build-Out Improved Conditions

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	L	LT	R	L	T	T	R	L	T
Maximum Queue (ft)	125	131	116	144	170	61	265	201	179	146	259	360
Average Queue (ft)	54	69	43	31	82	23	137	102	95	52	81	223
95th Queue (ft)	100	116	89	96	146	49	227	170	156	107	177	332
Link Distance (ft)		483			513			1734	1734			2321
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300		325	350		250	250			150	250	
Storage Blk Time (%)							0		1	0	0	6
Queuing Penalty (veh)							1		3	0	0	10

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	389	278
Average Queue (ft)	252	102
95th Queue (ft)	361	198
Link Distance (ft)	2321	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		350
Storage Blk Time (%)	1	
Queuing Penalty (veh)	5	

Intersection: 2: School Road & North Franklin Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	8	64	51
Average Queue (ft)	0	14	18
95th Queue (ft)	6	49	42
Link Distance (ft)	2189	2584	1110
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	R	L	T	TR	L	L	T
Maximum Queue (ft)	107	144	164	174	92	116	310	359	303	510	527	674
Average Queue (ft)	45	63	85	86	23	37	148	159	129	318	273	194
95th Queue (ft)	98	122	147	153	66	90	279	296	240	526	524	575
Link Distance (ft)			694	694				834	834			1693
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			300	300	250			500	500	
Storage Blk Time (%)							4	0		7	5	0
Queuing Penalty (veh)							10	1		20	13	0

Intersection: 3: SC 253 & Old Buncombe Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	R
Maximum Queue (ft)	460	249	369	419	397
Average Queue (ft)	170	28	210	227	204
95th Queue (ft)	395	135	329	362	344
Link Distance (ft)	1693		541	541	
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				1	
Storage Bay Dist (ft)		150			350
Storage Blk Time (%)		0	28	1	2
Queuing Penalty (veh)		0	6	5	5

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (ft)	152	514	693	444	207	117	138	171	177	141	149	306
Average Queue (ft)	55	171	226	300	104	52	64	77	98	50	77	88
95th Queue (ft)	116	397	581	473	186	99	122	141	158	110	133	218
Link Distance (ft)		1814	1814			2189	2189			2321	2321	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	275			350	260			350	350			260
Storage Blk Time (%)		0	0	14	0							
Queuing Penalty (veh)		0	0	30	0							

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	409	418
Average Queue (ft)	230	243
95th Queue (ft)	365	375
Link Distance (ft)	1175	1175
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	6	
Queuing Penalty (veh)	8	

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	EB	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	T	R	LTR	L	L	T	TR	L	T	T
Maximum Queue (ft)	119	97	17	180	55	278	316	547	380	27	310	326
Average Queue (ft)	49	41	1	69	13	135	168	113	66	3	159	168
95th Queue (ft)	97	81	9	145	42	239	273	334	194	17	264	276
Link Distance (ft)			896	896	1175			1269	1269		1693	1693
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								0	0			
Storage Bay Dist (ft)	250	250				250	250			150		
Storage Blk Time (%)						0	2	0			11	1
Queuing Penalty (veh)						2	10	1			1	2

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	242
Average Queue (ft)	82
95th Queue (ft)	166
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 6: Driveway #2 & Old Buncombe Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	TR	L	L	T	T	L	L	R	R
Maximum Queue (ft)	546	760	248	260	165	143	140	156	130	106
Average Queue (ft)	203	393	130	151	66	67	51	75	61	42
95th Queue (ft)	456	718	206	225	132	131	108	133	110	88
Link Distance (ft)	1734	1734			694	694		538	538	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250	250			250			350
Storage Blk Time (%)			0	1						
Queuing Penalty (veh)			1	3						

Intersection: 7: Driveway #4/Driveway #3 & Brooks Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	134	136	247	108	173	59	137	79	163	148
Average Queue (ft)	59	52	127	35	65	17	64	38	67	55
95th Queue (ft)	113	104	214	82	130	47	114	64	127	115
Link Distance (ft)		1926		896	896		543			543
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150		250			150		250	350	
Storage Blk Time (%)	1	0	0	0			0			
Queuing Penalty (veh)	1	0	0	0			0			

Intersection: 8: Driveway #5 & Brooks Avenue

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (ft)	107	74	8	175
Average Queue (ft)	45	35	0	61
95th Queue (ft)	87	63	5	137
Link Distance (ft)		1926	602	483
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 9: SC 253 & Driveway #6

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	81	68	83	36
Average Queue (ft)	26	21	31	3
95th Queue (ft)	64	54	68	23
Link Distance (ft)		557		2228
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 138

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	L	LT	R	L	T	T	R	L	T
Maximum Queue (ft)	280	293	258	302	360	252	349	516	506	250	152	280
Average Queue (ft)	176	182	130	160	205	78	162	314	308	153	67	166
95th Queue (ft)	260	264	223	265	316	177	340	468	470	329	127	261
Link Distance (ft)		483			513			1734	1734			2321
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	300		325	350		250	250			150	250	
Storage Blk Time (%)	0	0	0	0	4		0	17	33	0		1
Queuing Penalty (veh)	1	2	0	0	17		1	36	69	0		1

Intersection: 1: Old Buncombe Road & Brooks Avenue/Driveway #1

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	311	135
Average Queue (ft)	182	48
95th Queue (ft)	284	97
Link Distance (ft)	2321	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		350
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: School Road & North Franklin Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	49	73
Average Queue (ft)	9	35
95th Queue (ft)	35	63
Link Distance (ft)	2584	1110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SC 253 & Old Buncombe Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	R	L	T	TR	L	L	T
Maximum Queue (ft)	274	298	262	258	218	218	335	480	447	420	410	356
Average Queue (ft)	163	177	122	128	103	117	189	248	226	244	227	213
95th Queue (ft)	258	273	217	216	191	196	356	462	426	402	390	321
Link Distance (ft)			694	694				834	834			1693
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			300	300	250			500	500	
Storage Blk Time (%)	1	2	0				8	17		0	0	
Queuing Penalty (veh)	1	5	0				21	38		1	1	

Intersection: 3: SC 253 & Old Buncombe Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	R
Maximum Queue (ft)	389	249	413	438	305
Average Queue (ft)	245	67	254	266	120
95th Queue (ft)	358	202	384	387	240
Link Distance (ft)	1693		541	541	
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)		150			350
Storage Blk Time (%)		1	38	3	
Queuing Penalty (veh)		5	19	8	

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	L	T	TR	L
Maximum Queue (ft)	160	150	144	301	152	235	263	333	348	482	258	186
Average Queue (ft)	71	93	75	151	66	115	139	208	223	140	157	75
95th Queue (ft)	130	145	135	255	124	192	220	319	334	379	243	183
Link Distance (ft)		1814	1814			2189	2189			2321	2321	
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	275			350	260			350	350			260
Storage Blk Time (%)				0		0		1	1			3
Queuing Penalty (veh)				0		0		3	5			8

Intersection: 4: Old Buncombe Road & Sulphur Springs Road/North Franklin Road

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	336	361
Average Queue (ft)	181	203
95th Queue (ft)	302	320
Link Distance (ft)	1175	1175
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	EB	EB	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	T	R	LTR	L	L	T	TR	L	T	T
Maximum Queue (ft)	239	245	188	626	58	207	221	271	246	88	603	625
Average Queue (ft)	129	134	13	322	17	104	111	117	95	5	371	382
95th Queue (ft)	212	222	140	583	47	178	187	214	196	53	570	588
Link Distance (ft)			896	896	1175			1269	1269		1693	1693
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250				250	250			150		
Storage Blk Time (%)	0	1				0	0	0			42	21
Queuing Penalty (veh)	0	0				0	0	1			1	50

Intersection: 5: SC 253 & Brooks Avenue/Hilltop Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	400
Average Queue (ft)	168
95th Queue (ft)	446
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Driveway #2 & Old Buncombe Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	TR	L	L	T	T	L	L	R	R
Maximum Queue (ft)	776	742	201	213	220	216	294	350	315	287
Average Queue (ft)	303	441	112	136	105	106	158	201	178	152
95th Queue (ft)	593	710	177	201	200	202	266	300	282	250
Link Distance (ft)	1734	1734			694	694		538	538	
Upstream Blk Time (%)	0									
Queuing Penalty (veh)	0									
Storage Bay Dist (ft)			250	250			250			350
Storage Blk Time (%)				0	0		1	3	0	
Queuing Penalty (veh)				0	0		2	9	0	

Intersection: 7: Driveway #4/Driveway #3 & Brooks Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	104	161	234	135	168	212	362	284	410	355
Average Queue (ft)	43	74	121	49	57	56	173	107	205	119
95th Queue (ft)	87	138	208	106	132	141	305	213	356	272
Link Distance (ft)		1926		896	896		543			543
Upstream Blk Time (%)							0			0
Queuing Penalty (veh)							0			0
Storage Bay Dist (ft)	150		250			150		250	350	
Storage Blk Time (%)	0	1	0	0			14	0	2	0
Queuing Penalty (veh)	0	0	0	0			59	1	7	0

Intersection: 8: Driveway #5 & Brooks Avenue

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (ft)	153	196	36	399
Average Queue (ft)	51	89	4	130
95th Queue (ft)	118	174	21	298
Link Distance (ft)		1926	602	483
Upstream Blk Time (%)				0
Queuing Penalty (veh)				1
Storage Bay Dist (ft)	150			
Storage Blk Time (%)	1	3		
Queuing Penalty (veh)	2	1		

Intersection: 9: SC 253 & Driveway #6

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	236	404	69	15	13
Average Queue (ft)	129	140	23	1	1
95th Queue (ft)	263	429	55	16	9
Link Distance (ft)		557		541	2228
Upstream Blk Time (%)		5			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	150		150		
Storage Blk Time (%)	33	0		0	
Queuing Penalty (veh)	26	0		0	

Network Summary

Network wide Queuing Penalty: 408

Appendix G
Traffic Signal Warrant Analysis Worksheets

On The Trail Traffic Impact Analysis

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

Based on 2009 MUTCD

INTERSECTION NAME: Brooks Avenue/Driveway #1 at Old Buncombe Road

DATE: 01/06/21

INTERSECTION CONDITION: 2035 Build Out

MAJOR STREET: Old Buncombe

OF APPROACH LANES: 2

MINOR STREET: Brooks Avenue/Driveway #1

OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

USE 56% REDUCTION (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			600	200		900	100		480	160		720	80			
12:00 AM TO 01:00 AM																
01:00 AM TO 02:00 AM																
02:00 AM TO 03:00 AM																
03:00 AM TO 04:00 AM																
04:00 AM TO 05:00 AM																
05:00 AM TO 06:00 AM																
06:00 AM TO 07:00 AM																
07:00 AM TO 08:00 AM	2,737	267	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM																
09:00 AM TO 10:00 AM																
10:00 AM TO 11:00 AM																
11:00 AM TO 12:00 PM																
12:00 PM TO 01:00 PM																
01:00 PM TO 02:00 PM																
02:00 PM TO 03:00 PM																
03:00 PM TO 04:00 PM																
04:00 PM TO 05:00 PM																
05:00 PM TO 06:00 PM	2,513	788	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM																
07:00 PM TO 08:00 PM																
08:00 PM TO 09:00 PM																
09:00 PM TO 10:00 PM																
10:00 PM TO 11:00 PM																
11:00 PM TO 12:00 AM																
	5,250	1,055			**2**			**2**			**2**			**2**	**2**	**2**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant
- Condition A : Minimum Vehicular Volume
- Condition B : Interruption of Continuous Traffic
- Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant

On The Trail Traffic Impact Analysis

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

Based on 2009 MUTCD

INTERSECTION NAME: SC 253 at Brooks Avenue/Hilltop Avenue

DATE: 01/06/21

INTERSECTION CONDITION: 2035 Build Out

MAJOR STREET: SC 253

MINOR STREET: Brooks Avenue/Driveway #1

OF APPROACH LANES: 2

OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

USE 56% REDUCTION (Y OR N): N

	MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			600	200		900	100		480	160		720	80			
12:00 AM TO 01:00 AM																
01:00 AM TO 02:00 AM																
02:00 AM TO 03:00 AM																
03:00 AM TO 04:00 AM																
04:00 AM TO 05:00 AM																
05:00 AM TO 06:00 AM																
06:00 AM TO 07:00 AM																
07:00 AM TO 08:00 AM	2,951	279	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM																
09:00 AM TO 10:00 AM																
10:00 AM TO 11:00 AM																
11:00 AM TO 12:00 PM																
12:00 PM TO 01:00 PM																
01:00 PM TO 02:00 PM																
02:00 PM TO 03:00 PM																
03:00 PM TO 04:00 PM																
04:00 PM TO 05:00 PM																
05:00 PM TO 06:00 PM	3,281	711	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM																
07:00 PM TO 08:00 PM																
08:00 PM TO 09:00 PM																
09:00 PM TO 10:00 PM																
10:00 PM TO 11:00 PM																
11:00 PM TO 12:00 AM																
	6,232	990			**2**			**2**			**2**			**2**	**2**	**2**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant

Condition A : Minimum Vehicular Volume

Condition B : Interruption of Continuous Traffic

Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant

On The Trail Traffic Impact Analysis

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

Based on 2009 MUTCD

INTERSECTION NAME: Driveway #2 at Old Buncombe Road

DATE: 01/06/21

INTERSECTION CONDITION: 2035 Build Out

MAJOR STREET: Old Buncombe

OF APPROACH LANES: 2

MINOR STREET: Driveway #2

OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

USE 56% REDUCTION (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			600	200		900	100		480	160		720	80			
12:00 AM TO 01:00 AM																
01:00 AM TO 02:00 AM																
02:00 AM TO 03:00 AM																
03:00 AM TO 04:00 AM																
04:00 AM TO 05:00 AM																
05:00 AM TO 06:00 AM																
06:00 AM TO 07:00 AM																
07:00 AM TO 08:00 AM	2,689	280	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM																
09:00 AM TO 10:00 AM																
10:00 AM TO 11:00 AM																
11:00 AM TO 12:00 PM																
12:00 PM TO 01:00 PM																
01:00 PM TO 02:00 PM																
02:00 PM TO 03:00 PM																
03:00 PM TO 04:00 PM																
04:00 PM TO 05:00 PM																
05:00 PM TO 06:00 PM	2,720	832	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM																
07:00 PM TO 08:00 PM																
08:00 PM TO 09:00 PM																
09:00 PM TO 10:00 PM																
10:00 PM TO 11:00 PM																
11:00 PM TO 12:00 AM																
	5,409	1,111			**2**			**2**			**2**			**2**	**2**	**2**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant
- Condition A : Minimum Vehicular Volume
- Condition B : Interruption of Continuous Traffic
- Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant

On The Trail Traffic Impact Analysis

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

Based on 2009 MUTCD

INTERSECTION NAME: Driveway #3/#4 at Brooks Avenue

DATE: 01/06/21

INTERSECTION CONDITION: 2035 Build Out

MAJOR STREET: Brooks Avenue

OF APPROACH LANES: 2

MINOR STREET: Driveway #3/#4

OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

USE 56% REDUCTION (Y OR N): N

	MAJOR ST	MINOR ST	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
	BOTH APPROACHES	HIGHEST APPROACH	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			600	200		900	100		480	160		720	80			
12:00 AM TO 01:00 AM																
01:00 AM TO 02:00 AM																
02:00 AM TO 03:00 AM																
03:00 AM TO 04:00 AM																
04:00 AM TO 05:00 AM																
05:00 AM TO 06:00 AM																
06:00 AM TO 07:00 AM																
07:00 AM TO 08:00 AM	1,015	297	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
08:00 AM TO 09:00 AM																
09:00 AM TO 10:00 AM																
10:00 AM TO 11:00 AM																
11:00 AM TO 12:00 PM																
12:00 PM TO 01:00 PM																
01:00 PM TO 02:00 PM																
02:00 PM TO 03:00 PM																
03:00 PM TO 04:00 PM																
04:00 PM TO 05:00 PM																
05:00 PM TO 06:00 PM	749	823	Y	Y	**Y**		Y		Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM																
07:00 PM TO 08:00 PM																
08:00 PM TO 09:00 PM																
09:00 PM TO 10:00 PM																
10:00 PM TO 11:00 PM																
11:00 PM TO 12:00 AM																
	1,764	1,120			**2**			**1**			**2**			**2**	**2**	**1**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant
- Condition A : Minimum Vehicular Volume
- Condition B : Interruption of Continuous Traffic
- Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant

Appendix F – Parcel Owner Authorization Letters

January 4, 2021

Greenville County
Zoning Administration
301 University Ridge, Suite 4100
Greenville, SC 29601

Re: Planned Development of US Finishing/Cone Mill Property

This letter hereby authorizes Cone Mills Acquisition Group, LLC (Developer) and Dean Warhaft, Esq. to act as agent for Alston Street LLC ("Owner") for all documents pertaining to an application to rezone from I-1 to PD an approximately 2.87 acre portion of Owner's land, identified as Tax Map No 0160000100109. Nothing in the proposed PD should preclude the continued use of the subject premises from its current use.

OWNER:

Alston Street, LLC

BY: Charles Richy Stephens

January 6, 2021

Greenville County
Zoning Administration
301 University Ridge, Suite 4100
Greenville, SC 29601

Re: Planned Development of US Finishing/Cone Mill Property

This letter hereby authorizes Cone Mills Acquisition Group, LLC (Developer) and Dean Warhaft, Esq. to act as agent for American Fast Print Limited ("Owner") for all documents pertaining to an application to rezone an approximately 186 acre portion of Owner's land, identified as Tax Map No 0160000100100, 0160000100201, 0160000100101.

OWNER:

American Fast Print Limited

BY: _____
Matthew Head as receiver for American Fast Print

January 4, 2021

Greenville County
Zoning Administration
301 University Ridge, Suite 4100
Greenville, SC 29601

Re: Planned Development of US Finishing/Cone Mill Property

This letter hereby authorizes Cone Mills Acquisition Group, LLC (Developer) and Dean Warhaft, Esq. to act as agent for Langston Creek LLC ("Owner") for all documents pertaining to an application to rezone from I-2 to PD an approximately 4.05 acre portion of Owner's land, identified as Tax Map No 0160000100106. Nothing in the proposed PD should preclude the continued use of the subject premises from its current use.

OWNER:

Langston Creek, LLC

BY: Charles Richy Stephens

January 4, 2021

Greenville County
Zoning Administration
301 University Ridge, Suite 4100
Greenville, SC 29601

Re: Planned Development of US Finishing/Cone Mill Property

This letter hereby authorizes Cone Mills Acquisition Group, LLC (Developer) and Dean Warhaft, Esq. to act as agent for Piper Properties of Greenville LLC ("Owner") for all documents pertaining to an application to rezone an approximately 3 acre portion of Owner's land, identified as Tax Map No 015570000200200.

OWNER:

PIPER PROPERTIES OF GREENVILLE, LLC

BY: _____
Jimmy Durham

January 6, 2021

Greenville County
Zoning Administration
301 University Ridge, Suite 4100
Greenville, SC 29601

Re: Planned Development of US Finishing/Cone Mill Property

This letter hereby authorizes Cone Mills Acquisition Group, LLC (Developer) and Dean Warhaft, Esq. to act as agent for Piper Properties of Greenville LLC ("Owner") for all documents pertaining to an application to rezone an approximately 19.6 acre portion of Owner's land, identified as Tax Map No 0160000100102.

OWNER:

Piper Properties of Greenville LLC

BY: _____
Matthew Head as receiver for Piper Properties of Greenville LLC

UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

The South Carolina Department of Health and Environmental Control, Plaintiff, v. American Fast Print Limited (U.S.) (d/b/a U.S. Finishing), Duke Energy Corporation (f/k/a Duke Power Company), and Piper Properties Of Greenville, LLC, Defendants.	)	CIVIL ACTION NO. 6: 04 - 23349 - 13 **ORDER** **APPOINTING RECEIVER**
American Fast Print Limited (U.S.) (d/b/a U.S. Finishing), Third-Party Plaintiff, v. Duke Energy Corporation and Piper Properties Of Greenville, LLC, Third-Party Defendants.	)	

By Motion of Plaintiff, the South Carolina Department of Health and Environmental Control ("the Department" or "DHEC"), and with the agreement of Matthew Head, Esquire, Heckman Law Firm, it is hereby ordered that Mr. Head is appointed temporary receiver for Property owned by Defendant American Fast Print Limited (U.S.)(d/b/a US Finishing) ("American Fast Print") pursuant to Rule 66 of the

Federal Rules of Civil Procedure and the Consent Decree in this in this case entered by this Court on November 1, 2006 as follows:

1. Matthew Head, Esquire, is appointed temporary receiver ("Reciever") of the Property, subject to the attached Agreement for Temporary Receiver. As Receiver, Mr. Head will serve without bond until further order of this Court. The Department shall pay Mr. Head his rate of $150.00 per hour for all work under the Agreement for Temporary Receiver from the State Hazardous Waste Contingency Fund and shall be reimbursed from the proceeds of the sale of the Property.
2. American Fast Print including its owners, board members, employees, attorneys, agents, successors, and assigns, are enjoined from further operation of the Property and are hereby restrained and enjoined from disposing, transferring, exchanging, assigning, or in any way conveying the Property or any part of the Property.
3. American Fast Print, as well as its owners, board members, employees, attorneys, agents, successors, and assigns, having possession or control of any of the property, business, books, records, accounts, or assets of the Property are directed to deliver the same to the Receiver, and shall take no action, directly or indirectly, to hinder, obstruct, or otherwise interfere with the Receiver in the performance of his duties; provided, however, that with respect to the obligation to cooperate with and assist the Receiver, any such person shall be entitled to seek a further order of the Court relieving him or her from such obligation and shall be entitled to seek any other relief from this Court.

4. Except for an act of gross negligence or willful misconduct, the Receiver and all persons employed by him shall not be liable for any loss or damage incurred by American Fast Print or any other person by reason of any act performed or omitted to be performed by them in connection with the discharge of their duties and responsibilities in this matter.

IT IS SO ORDERED.

G. ROSS ANDERSON, JR.
UNITED STATES DISTRICT JUDGE

May 23, 2008

UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

The South Carolina Department of Health and Environmental Control, Plaintiff, v. American Fast Print Limited (U.S.) (d/b/a U.S. Finishing), Duke Energy Corporation (f/k/a Duke Power Company), and Piper Properties Of Greenville, LLC, Defendants.	CIVIL ACTION NO. 6:04-cv-23349-GRA ORDER
American Fast Print Limited (U.S.) (d/b/a U.S. Finishing), Third-Party Plaintiff, v. Duke Energy Corporation and Piper Properties Of Greenville, LLC, Third-Party Defendants.	

By Motion of Plaintiff, the South Carolina Department of Health and Environmental Control ("the Department" or "DHEC"), and with the agreement of Matthew Head, Esquire, Head Law Firm, LLC, it is hereby ordered that Mr. Head is

appointed temporary receiver for Property owned by Defendant Piper Properties of Greenville, LLC ("Piper Properties") pursuant to Rule 66 of the Federal Rules of Civil Procedure and the Consent Decree in this in this case entered by this Court on November 1, 2006 as follows:

1. Matthew Head, Esquire, is appointed temporary receiver ("Receiver") of the Property, subject to the attached Agreement for Temporary Receiver. As Receiver, Mr. Head will serve without bond until further order of this Court. The Department shall pay Mr. Head his rate of $150.00 per hour for all work under the Agreement for Temporary Receiver from the State Hazardous Waste Contingency Fund and shall be reimbursed from the proceeds of the sale of the Property.
2. Piper Properties including its owners, board members, employees, attorneys, agents, successors, and assigns, are enjoined from further operation of the Property and are hereby restrained and enjoined from disposing, transferring, exchanging, assigning, or in any way conveying the Property or any part of the Property.
3. Piper Properties, as well as its owners, board members, employees, attorneys, agents, successors, and assigns, having possession or control of any of the property, business, books, records, accounts, or assets of the Property are directed to deliver the same to the Receiver, and shall take no action, directly or indirectly, to hinder, obstruct, or otherwise interfere with

the Receiver in the performance of his duties; provided, however, that with respect to the obligation to cooperate with and assist the Receiver, any such person shall be entitled to seek a further order of the Court relieving him or her from such obligation and shall be entitled to seek any other relief from this Court.

4. Except for an act of gross negligence or willful misconduct, the Receiver and all persons employed by him shall not be liable for any loss or damage incurred by Piper Properties or any other person by reason of any act performed or omitted to be performed by them in connection with the discharge of their duties and responsibilities in this matter.

5. The Receiver shall file quarterly reports outlining his progress with the Court, such quarterly reports to be no longer than one page in length.

IT IS SO ORDERED.

G. ROSS ANDERSON, JR.
UNITED STATES DISTRICT JUDGE

Anderson, South Carolina

May 6, 2009